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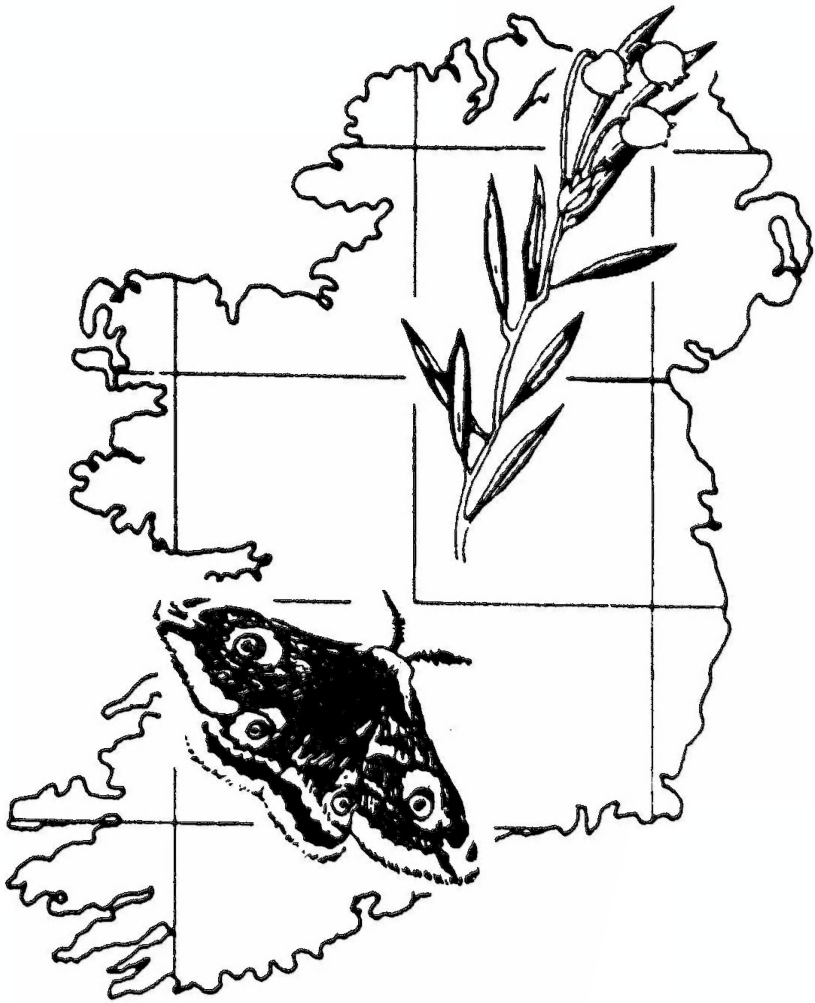

Bulletin No. 31

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BULLETIN OF THE IRISH BIOGEOGRAPHICAL SOCIETY

Number 31

CONTENTS

Editorial……..……..……1

Instructions to contributors.....……2

Old non-native broadleaf trees as a potential biodiversity resource in Irish woodlands: Staphylinidae (Coleoptera) from Ballyseedy Wood, Co. Kerry
Jervis A. Good.....3

The spider (Arachnida: Araneae) fauna of Tory Island, Co. Donegal, Ireland
Martin Cawley.....20

A review of the Ceraphronoidea (Hymenoptera) including two species new to Ireland
J. P. O'Connor.....….....…44

Some distributional records for Irish Amphipoda
J. M. C. Holmes.....48

Two spiders (Araneae) new to Ireland from raised bog: *Hypsosinga albovittata* (Westring) (Araneidae) and *Minicia marginella* (Wider) (Linyphiidae)
Myles Nolan.....101

A brief assessment of the spiders (Araneae) of Lodge Bog, Co. Kildare, Ireland
Myles Nolan.....107

Finding jewels amongst the reeds:
a review of the Irish donaciine beetles (Coleoptera: Chrysomelidae)
Brian Nelson, John Walsh and Garth Foster.....117

A new record of *Dytiscus circumflexus* Fabricius 1801, from Co. Waterford, Ireland
Gustavo Becerra Jurado, James Johnson and Mary Kelly-Quinn.....194

Contributions towards a checklist of insects feeding on Irish trees.
Part 1: Hymenoptera, Lepidoptera and Orthoptera
J. P. O'Connor and P. Ashe.....197

Faunistic data for the genus *Tetanocera* (Diptera: Sciomyzidae) in the west of Ireland
C. D. Williams, R. J. Mc Donnell, C. Maher, C. J. Mulkeen and M. J. Gormally.....268

The craneflies (Diptera) of Ireland. Part 5. Tipulidae
P. Ashe, J. P. O'Connor, P. J. Chandler, A. E. Stubbs, R. I. Vane-Wright and K. N. A. Alexander.....296

The craneflies (Diptera) of Ireland. Part 6. Limoniidae: Chioneinae
P. Ashe, J. P. O'Connor, P. J. Chandler, A. E. Stubbs, R. I. Vane-Wright and K. N. A. Alexander.....358

Book review. Illustrations of alien plants of the British Isles.....409

Other publications available from the Irish Biogeographical Society….....411

Notices…….....……...…….....413

EDITORIAL

The Irish Biogeographical Society has made considerable progress with the electronic development of its publications etc. The new website has been both popular and profitable. Sales have been very successful. Camera-ready copy has been discontinued for all our publications and copy is now supplied to the printer in PDF format. This year, reprints will not be sent to authors. Instead, articles will be sent as PDF documents and authors will be able to produce their own reprints. This will reduce the print-run of the *Bulletin* and whenever possible, these savings will be invested in additional pages. Papers may be submitted electronically in Word format through our Treasurer's e-mail address ampersandwalsh@gmail.com.

Thanks to the recruitment of new members, our membership remains constant. Due to the generosity of our sponsors, the subscription remains at €15 and represents excellent value for money. In addition to this year's *Bulletin*, paid up members will receive a free copy of *Occasional Publication* **Number 10** *A catalogue of the Irish Ichneumonidae (Hymenoptera: Ichneumonoidea)*.

Bulletin **Number 31** is dedicated to the memory of our recently deceased members:- Professor John Bracken, Dr Brenda Healy and Dr Tomás Burke. We offer our sympathy to their families.

On behalf of the Committee of The Irish Biogeographical Society, I wish to thank Dr Pat Wallace, Director of the National Museum, for his support, our sponsors for their essential financial support and our referees for their advice.

J. P. O'Connor

Editor

3 October 2007

INSTRUCTIONS TO CONTRIBUTORS

1. Manuscripts should follow the format of articles in this *Bulletin*. The titles of journals should be given in full in the references.

2. Manuscripts should be submitted as typed copy on A4 paper, using double-spacing and 2.5cm (one inch) margins. Whenever possible, also submit the text on diskette. **Word is preferred and Times New Roman 13pt should be used.**

3. Figures and tables should be submitted in a size suitable for reduction to A5 without loss of detail. It is important that the text should remain legible after reduction.

4. Records: please ensure that, when possible, the following information is incorporated in each record included in a manuscript:-
(a) latin name of organism.
(b) statement of reference work used as the source of nomenclature employed in the text. The describer's name should be also given when a zoological species is first mentioned in the text.
(c) locality details including at least a four figure Irish grid reference (e.g. N3946), county or vice-county and some ecological data about the collection site, plus date of capture.
(d) Collector's name and determiner's name (where different from collector's name), and
(e) altitude data should be included where relevant.

5. Manuscripts should be submitted to the Editor, Dr J. P. O'Connor, at the following address:-
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OLD NON-NATIVE BROADLEAF TREES AS A POTENTIAL BIODIVERSITY RESOURCE IN IRISH WOODLANDS: STAPHYLINIDAE (COLEOPTERA) FROM BALLYSEEDY WOOD, CO. KERRY

Jervis A. Good

Glinny, Riverstick, Co. Cork, Ireland.

Dedicated to Dr Martin C. D. Speight, on the occasion of his retirement, and in recognition of his great contribution to saproxylic insect ecology.

Abstract

Forty species of Staphylinidae were recorded from old demesne woodland at Ballyseedy Wood, Co. Kerry in 2001. Amongst the 26 species which were found in fungal fruiting bodies associated with decaying trees or dead wood, three species (*Agaricochara latissima*, *Atheta picipes*, *Gyrophaena joyi*) were considered indicators of ecologically well-developed woodland, and a further four were typical woodland saproxylic species. This indicates that Ballyseedy Wood is of potential conservation value for saproxylic communities. Five of the nine saproxylic species were recorded from old or dead non-native trees, and all seven saproxylic species have been recorded from fungi or bark of non-native species such as *Fagus sylvatica* (beech) or *Acer pseudoplatanus* (sycamore). Complete removal of overmature and mature non-native deciduous trees, in conservation woodlands without a continuity of native tree age-classes, may result in a loss of saproxylic biodiversity because of the absence of the recruitment of old trees.

Introduction

Non-native or exotic broadleaf tree species were widely planted in Irish demesne woodlands in the eighteenth and nineteenth centuries (Reeves-Smyth, 1997; Tomlinson, 1997). These frequently included European species such as beech (*Fagus sylvatica*), sycamore (*Acer pseudoplatanus*), English elm (*Ulmus procera*), Cornish elm (*U. minor* ssp. *angustifolia*), horse chestnut (*Aesculus hippocastanum*), grey poplar (*Populus* x *canescens*), black Italian

poplar (*P.* x *canadensis* cv. 'Serotina'), and common lime (*Tilia* x *europaea*). The fashion has now changed, at least in woodlands where biodiversity conservation is a priority, and it is often recommended that exotic trees are removed to allow native broadleaf trees to regenerate. However, old (overmature) trees of sycamore and beech have been found to be a habitat for a number of rare saproxylic insect species, which would otherwise breed in overmature or dead native trees, such as oak, ash, wych elm and alder (Speight, 1985, 1987). In the absence of a cohort of old native trees in a woodland of conservation importance, old non-native broadleaf trees may provide continuity of habitat for saproxylic invertebrates and fungi (Speight, 1989a). An opportunity to examine this issue was provided by a sample of Staphylinidae from the old demesne woodland at Ballyseedy Wood, undertaken as part of an ecological survey for Kerry County Council. The results are reported here.

Methods

Five microhabitats were selected for sampling (including two wetland microhabitats which are also included here for site record):-

(1) Tree macrofungi: sporocarps growing on standing or fallen dead wood: *Armillaria gallica* Marxmüller and Romagnesi on upturned root-plate of *Fagus sylvatica* (Q870124, 2 November 2001); *Crepidotus* sp. on broken dead trunk of *Fraxinus excelsior* (Q865125, 2 November 2001); decomposing *Fistulina hepatica* (Schaeff) With. on trunk of *Quercus* sp. (Q869125, 2 November 2001); *Gymnopilus junonius* (Fr.) Orton on base of trunk of non-native *Populus* sp. (Q878129, 14 October 2001); *Postia tephroleuca* (Fr.) Jülich on dead fallen *Ulmus* sp. (Q872128, 14 October 2001); *Armillaria mellea* (Vahl: Fr.) Kummer on trunk of overmature *Salix* sp. (Q875130, 14 October 2001); unidentified agaric on dead trunk of *Aesculus hippocastanum* (Q873128, 14 October 2001); unidentified agaric on decomposed fallen trunk of *Ulmus* sp. (Q873129, 14 October 2001); unidentified agaric on *Alnus glutinosa* (Q873129, 14 October 2001); ?-*Mycena* sp. on dead *Alnus glutinosa* (Q873129, 14 October 2001).

(2) Standing dead wood: 'Mulm' (wood decomposed by brown-rot) in dead standing trunk of *Alnus glutinosa* (Q873129, 14 October 2001).

(3) Soil macrofungi: sporocarps growing in woodland soil: *Hebeloma* sp. under overmature *Quercus petraea* (Q869125, 2 November 2001); *Hebeloma* sp. under mature *Tilia* sp. (Q878129, 14 October 2001); unidentified agaric under *Aesculus hippocastanum* (Q873128, 14 October 2001).
(4) Drainage ditches, 14 October 2001. North- and south-facing banks of a drainage ditch, with complete cover by liverwort, on silt or silty-clay soil, under tree canopy (Q870127).
(5) Temporarily flooded bare soil. Plastic cup pitfall traps with rain covers (n = 6, ethylene glycol preservative), set at the margins of temporarily flooded pools under broadleaf canopy (Q875130, 14 October - 2 November 2001); examination of soil under algal mat (Q875130, 14 October 2001).

Species were selected as indicators of well-developed habitat on the basis of the combination of two attributes: (1) they have a restricted habitat preference to a particular type of wood decomposition or woodland microhabitat, and (2) they are reported in the literature as being local or rare, suggesting that they are less likely to survive in historically degraded ecosystems. 'Well-developed' habitat is taken to mean that the ecosystem has been sufficiently unmodified by human activity to allow it retain many local stenotopic species. Typical woodland saproxylic species were those which were listed by Alexander (2002).

Macrofungi were identified as far as possible using Courtecuisse and Duhem (2000) and Phillips (1981); their nomenclature follows Legon *et al.* (2005). Nomenclature of Staphylinidae follows Lott and Duff (2003) except for *Atheta s.l.* where it follows Anderson *et al.* (1997), and that of vascular plants follows Stace (1997). Voucher specimens of indicator staphylinid species have been retained in the author's collection.

Results

In total, 40 species of Staphylinidae were recorded from Ballyseedy Wood in October and November 2001, of which three species (*Agaricochara latissima, Gyrophaena joyi, Atheta picipes*) are considered indicators of ecologically well-developed woodland (Tables 1-2). A further species (*Atheta aquatilis*), considered an indicator of wetland habitat (Good, 2004), was

also recorded.

Agaricochara (=*Gyrophaena*) *latissima* was previously recorded from three localities in Ireland (Anderson, 1997). It was recorded as local in Great Britain by Joy (1932), but it is not listed as a notable species (Hyman and Parsons, 1994). The species occurs in Western and Central Europe, southern Sweden and Norway, Denmark, Italy, Corsica and Cyprus (Horion, 1967). It is recorded only locally in many countries, and while it was recorded as not rare in parts of Austria and Germany (Horion, 1967), it is more recently listed as Red List status 3 in Germany (Geiser, 1998). It occurs especially under fungal-infected bark and in bracket fungi on deciduous trees (Horion, 1967; Palm, 1968; Alexander, 2002; see Table 4). A single male was recorded at Ballyseedy Wood on the polypore *Postia* ?-*tephroleuca* growing on a dead fallen *Ulmus*.

Atheta (*Traumoecia*) *picipes* has been recorded from three localities in Ireland, two in Co. Antrim and one in Co. Wicklow (Anderson, 1997). It is only known locally, if widespread, in Great Britain (Hyman and Parsons, 1994), and appears to be widespread in Europe, although often uncommon (Porta, 1926; Palm, 1970; Benick and Lohse, 1974; Burakowski *et al*., 1981; Lucht, 1989). Although Koch (1989) classified the species as eurytopic and also occurring in gardens, it appears to be predominantly a woodland species associated with fungal growth under bark or on wood, and with decaying macrofungi sporophores (see Table 4) (Benick, 1952; Palm, 1959, 1970; Koch, 1989; Hyman and Parsons, 1994; Good and Butler, 1995; Alexander, 2002). Three individuals of this species were recorded from Ballyseedy Wood, all as single individuals from three different sporophores (Table 1) (on one native tree (*Fraxinus exelsior*), and two non-native trees (*Populus* sp., *Aesculus hippocastaneum*).

There is a single Irish record of *Gyrophaena joyi*, from an estate woodland in Co. Down (Nash *et al*., 1997; R. Anderson, *pers. comm.*). The species is very local in Great Britain (Hyman and Parsons, 1994) and, in general, neither common nor rare in Europe (Horion, 1967; Palm, 1968) although with only local or scattered records from many countries such as Belgium (Drugmand and Convent, 2003), Germany and Austria (Horion, 1967) and Poland (Burakowski *et al*., 1981). It is a woodland mycetobiont species in Central Europe, according to Koch (1989),

occurring especially in *Polyporus squamosus* as well as in numbers on other species of fungi (see Table 4) (Benick, 1952; Horion, 1967). In Scandanavia, it is recorded especially from fungal sporophores on tree stumps and decaying deciduous tree trunks (Palm, 1968). In Great Britain, it is associated with fungi in wet woodland (Hyman and Parsons, 1994; Alexander, 2002). A single male was found on an undetermined agaric on a dead *Ulmus* trunk at Ballyseedy Wood (Table 1).

Four additional species, listed as saproxylic by Alexander (2002), were also recorded (Tables 1 and 2): *Autalia impressa, Dinaraea linearis, Gyrophaena fasciata* and *Phyllodrepa ioptera*. All these species are as likely to breed on non-native as on native deciduous tree species (Table 4).

There were many more staphylinid species, but slightly less saproxylic species, recorded from non-native tree species than native tree species (Table 3). The number of recorded indicator species was the same in native compared to non-native trees with two species (*Agaricochara latissima, Gyrophaena joyi*) recorded from *Ulmus* (which could be either native or non-native) (Table 3). However, all indicator and typical species were only represented by single or a few individuals in autumn, so the fungi from which they were recorded cannot be taken to be breeding habitat (see Good and Jagers op Akkerhuis, 2005).

Discussion

Species associated with saproxylic fungi form an important component of woodland insect communities (Elton, 1966; Speight, 1989a; Dajoz, 2000). The relatively high proportion of indicator species (three out of 26 recorded from fungal fruiting bodies), in addition to four typical woodland saproxylic species (as listed in Alexander, 2002), indicates that Ballyseedy Wood has conservation value for its saproxylic communities. Irish woodlands have few saproxylic species compared to Great Britain and northern France (e.g. Speight, 1989b), but woods with relatively high numbers of characteristic species are likely to be of conservation importance.

The importance of European old non-native trees, such as sycamore (*Acer pseudoplatanus*)

and beech (*Fagus sylvatica*), for the survival of Irish saproxylic insects, was pointed out some time ago by Speight (1985, 1987). Rare species from woodlands in south-west Ireland, such as the elaterid *Melasis buprestoides*, can also breed in non-native trees such as beech (O'Connor and O'Connor, 1987). In England, a single non-native oak tree (Turkey oak (*Quercus cerris*)) hosted 74 saproxylic species, and ranked higher than many whole woodland sites for the quality of its fauna (Whitehead, 1996, 2005). While the small data set collected here is obviously not based on sufficiently intensive comparative sampling to accurately compare the staphylinid fauna of native with that of non-native trees in Ballyseedy Wood, the results nevertheless clearly support the conclusion that non-native trees are important for saproxylic communities.

The actual tree hosts from which the saproxylic species were recorded from Ballyseedy Wood (Table 3), and the trees hosting the fungi and microhabitats from which the staphylinid species have been recorded in the literature (Table 4), indicate that non-native species like beech can support all of the seven species concerned. Although there is a lack of precise breeding records for some species, the breeding microhabitat is likely to be represented by repeated literature records of fungi (bracket, agaric and subcorticolous) which can be supported by non-native deciduous trees (Table 4). Mycetophilous staphylinids distinguish fungi rather than tree species. If the same fungi can grow as well on exotic as on native tree species, then the ability of these fungi to grow on exotic species in the absence of suitable overmature or dead native species is what is important.

The lack of recruitment of younger age-classes of trees is a problem in many woodlands in Great Britain, as can be seen from a perusal of county Biodiversity Action Plans available on the Internet. There is no reason to conclude that this will not be a similar problem in many Irish native woodlands. Continuity of saproxylic habitat is particularly important for biodiversity in woodland (Speight, 1989a; Kirby, 1992), albeit at the landscape rather than the stand level (Ohlson *et al.*, 1997). In isolated Irish demesne woodlands being converted to native woodlands, the removal of overmature and mature non-native trees may lead to a loss of biodiversity if there is no future recruitment from younger native trees into the senescent age-classes. Indeed, in young or mature non-native trees, mechanical simulation of tree damage by

natural storms has been both recommended (Speight, 1989a) and practised to overcome the lack of recruitment of older trees in young-growth forests, for example on red oak (*Quercus rubra*) and London plane (*Platanus* x *hispanica*) in a northern Italian oak-hornbeam forest (Cavalli and Mason, 2003). The importance of retaining ancient individual non-native trees has been recognised by the Native Woodland Scheme (Forest Service, 2005), and options such as pollarding, snagging or partially debarking younger non-native trees have also been recommended instead of simply removing them (see Speight, 1989a).

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TABLE 1. Staphylinidae (Coleoptera) from fungal fruiting bodies at Ballyseedy Wood. Abbreviations of fungi: *A. gall*. - *Armillaria gallica*; *Cr.* sp - *Crepidotus* sp.; *F. hep*. - decomposing *Fistulina hepatica*; *G. jun*. - *Gymnopilus junonius*; indet 1 - indetermined agaric on *Aesculus*; indet 2 - indetermined agaric on *Ulmus*; *Postia* - *Postia ?-tephroleuca*. Indicator species are marked with an asterisk; typical saproxylic species with 's'. *Megarthrus depressus* refers to *M. depressus* (=*sinuaticollis*) (see Lott and Duff, 2003).

Species	*A. gall.*	*Cr.* sp	*F. hep.*	*G. jun.*	indet 1	indet 2	*Postia*
Agaricochara latissima (Stephens) *s	-	-	-	-	-	-	1
Aleochara sparsa Heer	1	-	-	-	-	-	-
Atheta aeneicollis (Sharp)	4	-	-	-	-	-	-
Atheta aquatilis (Thomson) *	2	-	-	-	-	-	-
Atheta britanniae (Bernh. & Scheerp)	1	-	3	-	-	-	-
Atheta castanoptera (Mannerheim)	1	-	-	-	-	-	-
Atheta celata (Erichson)	2	-	-	-	-	-	-
Atheta crassicornis (Fabricius)	-	-	-	2	1	-	-
Atheta laticollis (Stephens)	1	-	-	-	-	-	-
Atheta nigra (Kraatz)	1	-	-	-	-	-	-
Atheta picipes (Thomson) *s	-	1	-	1	1	-	-
Atheta ravilla (Erichson)	10	-	-	-	-	-	-
Autalia impressa (Olivier) s	1	-	-	-	-	-	-
Gyrophaena fasciata (Marsham) s	-	-	-	1	3	-	-
Gyrophaena joyi Wendeler *s	-	-	-	-	-	1	-
Lordithon exoletus (Erichson)	-	-	-	1	-	-	-
Lordithon trinotatus (Erichson)	-	-	-	-	1	-	-
Megarthrus depressus (Paykull)	1	-	-	-	-	-	-
Omalium excavatum Stephens	2	-	-	-	-	-	-

TABLE 1 (continued). Staphylinidae (Coleoptera) from fungal fruiting bodies at Ballyseedy Wood. Abbreviations of fungi: *A.mell - Armillaria mellea* on *Salix* sp.; *Heb*. 1 - *Hebeloma* sp. under *Quercus* sp.; *Heb*. 2. - *Hebeloma* sp. under *Tilia*; indet 3 - indetermined agaric under *Aesculus hippocastaneum* and *Ulmus* sp.; indet 4 - indetermined agaric on *Alnus glutinosa*; ?-*Myc*. - ?-*Mycaena* sp. on *Alnus glutinosa*. Indicator species are marked with an asterisk; typical saproxylic species with 's'.

Species	*A. mell.*	*Heb.* 1	*Heb.* 2	indet 3	indet 4	?-*Myc.*
Omalium rivulare (Paykull)	4	-	-	-	-	-
Omalium rugatum Mulsant & Rey	-	-	-	-	1	-
Phyllodrepa ioptera (Stephens) s	-	-	2	-	-	-
Proteinus brachypterus (Fabricius)	41	-	17	-	10	-
Proteinus ovalis Stephens	9	-	-	-	-	-
Quedius schatzmayri Gridelli	-	-	-	1	-	-
Tachinus laticollis Gravenhorst	1	-	-	-	-	-
Amischa analis (Gravenhorst)	-	-	-	1	-	-
Atheta amplicollis (Mulsant & Rey)	-	-	-	-	1	-
Atheta castanoptera (Mannerheim)	-	-	-	-	2	-
Gyrophaena fasciata (Marsham) s	3	-	4	1	-	-
Lordithon trinotatus (Erichson)	-	1	1	2	-	-
Philhygra malleus (Joy)	-	-	-	1	-	-
Proteinus brachypterus (Fabricius)	-	1	2	2	3	1
Proteinus ovalis Stephens	-	-	-	-	5	-

TABLE 2. Staphylinidae (Coleoptera) from non-fungal microhabitats in Ballyseedy Wood. Abbreviations: alg. mat - algal mat on alluvium; N-drain - under liverworts on north-facing drainage ditch bank; S-drain - under liverworts on south-facing drainage ditch bank; mulm - mulm in rotten trunk of *Alnus glutinosa*; pools - pitfall traps at temporarily flooded pool margins; mv trap - mercury vapour trap at woodland margin (from K.G.M. Bond). Indicator species are marked with an asterisk; typical saproxylic species with 's'.

Species	alg. mat	N drain	S drain	mulm	pools	mv trap
Acrotona aterrima (Gravenhorst)	-	-	2	-	-	-
Amischa analis (Gravenhorst)	-	3	5	-	-	-
Anotylus rugosus (Fabricius)	-	1	-	-	-	-
Atheta amplicollis (Mulsant & Rey)	-	2	-	-	-	-
Atheta longicornis (Gravenhorst)	-	1	-	-	-	-
Carpelimus elongatus (Erichson)	-	5	-	-	-	-
Deleaster dichrous (Gravenhorst)	-	-	-	-	-	1
Dinaraea linearis (Gravenhorst) s	-	-	-	3	-	-
Gabrius appendiculatus Sharp	-	1	1	-	-	-
Lathrobium longulum Gravenhorst	-	1	-	-	-	-
Ocyusa maura (Erichson)	-	-	-	-	1	-
Philonthus decorus (Gravenhorst)	1	-	-	-	-	-
Stenus bifoveolatus Gyllenhal	-	-	-	1	-	-

TABLE 3. Number of staphylinid species recorded from native and non-native trees in Ballyseedy Wood, Co. Kerry. *Ulmus* sp(p) are listed separately because it is not known whether the trees were native species (*U. glabra*) or not (*U. procera, U. minor*). ind. spp = indicator species; typ. spp = typical (non-indicator) saproxylic species.

Tree class	***No. tree spp***	***No. staph. spp***	***No. ind. spp***	***No. typ. spp***
Native	3	7	1	3
Non-native	4	23	1	2
Ulmus sp(p)	1-2	2	2	-

Tree associations recorded

Indicator species: *Agaricochara latissima* (*Ulmus*), *Gyrophaena joyi* (*Ulmus*), *Atheta picipes* (*Fraxinus,* non-native *Populus*, *Aesculus*).

Typical species: *Autalia impressa* (*Fagus*), *Dinaraea linearis (Alnus), Gyrophaena fasciata* (non-native *Populus, Aesculus, Salix*), *Phyllodrepa ioptera* (*Quercus*).

TABLE 4. Genera or classes of trees recorded in the literature as hosts to microhabitats (fungal sporophores and under bark) of saproxylic staphylinid species recorded from Ballyseedy Wood. For species of fungi, the recorded tree hosts are given of the fungi recorded as Irish in Legon *et al*. (2005). For *Gyrophaena* spp. with a large number of fungal host records, only those fungi from which the species has been recorded in numbers as females have been included, as these are more likely to represent breeding hosts (Good and Jagers op Akkerhuis, 2005). Literature sources are given in abbreviated form (see list at base of table). *Acer ps*. = *Acer pseudoplatanus* (sycamore). Nomenclature of fungi follows Legon *et al*. (2005). Non-native tree genera are underlined.

Staphylinid species	***Microhabitat***	***Tree species***	***Source***
Agaricochara latissima	*Daedaleopsis confragosa*	*Betula, Corylus*, Fagus, *Fraxinus, Salix*, etc.	Don., Leg.
	Piptoporus betulinus	*Betula* spp.	Don., Leg.
	Trametes gibbosa	*Acer ps.*, *Fagus*, *Aesculus*	Hor., Leg.
	Trametes versicolor	Deciduous trees & shrubs	Don., Leg.
	-	*Pinus*	Ben.
	-	*Fagus* (copper beech)	Ben.
Atheta picipes	Bark with fungal growth	Deciduous trees	Ben., Palm (59)
	Bark & wood	Unspecified trees	Koch
	Hypholoma sp.	Decid. & coniferous trees	Alex., Leg.
	Meripilus giganteus	Esp. *Fagus*	Alex., Leg.
	Polyporus squamosus	*Acer ps.*, *Fagus*, *Fraxinus*, *Ulmus*	Ben., Leg.
	Piptoporus betulinus	*Betula* spp.	Ben., Alex., Leg.
	Trametes hirsuta	*Betula*, *Fagus*, etc.	Ben., Leg.
Autalia impressa	*Armillaria mellea*	Deciduous trees & shrubs	Don., Hor., Leg.
	Lactarius piperatus	*Quercus*, *Fagus*	Ben., Leg.
	Piptoporus betulinus	*Betula* spp.	Ben., Leg.
	Hypholoma spp.	Decid. & coniferous trees	Hor., Leg.
	Decaying fungi	On unspecified wood	Alex.
Dinarea linearis	Under bark	Deciduous & coniferous trees	Alex., Palm (70)

TABLE 4 (continued)

Gyrophaena fasciata	*Galerina marginata*	Deciduous & coniferous trees	Ben., Leg.
	Kuehneromyces mutabilis	*Betula, Fagus, Fraxinus, Ulmus*	Ben., Leg.
	Polyporus squamosus	*Acer ps., Fagus, Fraxinus, Ulmus*	Ben., Leg.
Gyrophaena joyi	*Armillaria mellea*	Deciduous trees & shrubs	Ben., Leg.
	Hohenbuehelia atrocaerulea	*Betula, Fagus, Ulmus*	Ben., Leg.
	Inocybe erubescens	*Fagus, Coylus, Betula*	Ben., Leg.
	Panellus stipticus	*Quercus, Acer ps., Almus, Betula, Fagus, Fraxinus*	Ben., Leg.
Polyporus squamosus		*Acer ps., Fagus, Fraxinus, Ulmus*	Ben., Alex., Leg.
Phyllodrepa ioptera	Under decaying bark	*Quercus, Fagus, Salix, Populus*	Hor.
	Polyporus squamosus	*Acer ps., Fagus, Fraxinus, Ulmus*	Ben, Leg.
	Piptoporus betulinus	*Betula* spp.	Ben, Leg.
	Trametes hirsuta	*Betula, Fagus*, etc.	Ben., Leg.

Literature sources: Alexander (2002), Benick (1952), Donisthorpe (1935), Horion (1963, 1967), Koch (1989), Legon *et al*. (2005), Palm (1959, 1970).

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THE SPIDER (ARACHNIDA: ARANEAE) FAUNA OF TORY ISLAND, CO. DONEGAL, IRELAND

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Abstract

Four visits to Tory Island, at differing times of the year, resulted in the collection of over 1900 identifiable spiders. A total of 110 species, representing 19 families were collected, and of these 40 had not previously been reported from Co. Donegal. A number of scarce and under-recorded species were collected. The absence of trees and bushes, and the highly exposed nature of the island, were judged as having significant impacts on the spider fauna.

Description of Tory Island

Tory Island is situated over 11km off the coast of Co. Donegal in the extreme north-west of Ireland. It is the most remote of the inhabited Irish offshore islands. The island has a predominantly northwest-southeast aspect, with a maximum length of *circa* 5km, a maximum width of *circa* 1km, and an area of 320 hectares. Much of the island supports either poor, lightly grazed pasture or exhausted peat bogs. Of more interest to the naturalist are wetlands associated with four small lakes. Much of the coastline, including most of the northern section, is inaccessible. About 180 people live on the island year round, concentrated in West Town, with a smaller centre of population in East Town. The population increases during the summer months when Tory people who have settled on the mainland return for the milder months of the year. The Irish language, and Irish culture generally, still thrive on the island. Much general information on the people, traditions and history of the island can be found in MacLochlainn (2003) and Hunter (2006).

Although the natural history of Tory has received very little study, available evidence would

suggest that the island has a distinctly impoverished fauna and flora, even compared to other offshore islands. Randall (2004) lists just 199 plant species on the island, and comments about the notable absence of alien species. Indeed only one non-native plant, Montbretia *Crocosmia aurea x C. pottsii* (Lemoine ex Burb. and Dean) makes even a locally significant impact on the flora. Notable botanical absentees are too numerous to mention, however the complete absence of trees and bushes, even bramble *Rubus* sp. and gorse *Ulex europaeus* L., is a remarkable feature of the flora. Rabbits *Oryctolagus cuniculus* (L.), woodmice *Aphodemus sylvaticus* (L.) and apparently pygmy shrews *Sorex minutus* L. are present on the island, however the brown rat *Rattus norvegicus* (Berkenhout) is a notable absentee, as are the larger land mammals. Numerous passerine birds which are common on the mainland are either absent or rare, e.g. robin *Erithacus rubecula* L., tits *Parus* spp., jackdaw *Corvus monedula* L., rook *Corvus frugilegus* L. etc. On the positive side, Tory continues to support a thriving population of corncrakes *Crex crex* L. The common frog *Rana temporaria* L. is a relatively recent deliberate introduction, and is scattered on the island, however the smooth newt *Triturus vulgaris* L. and common lizard *Lacerta vivipara* Jacquin are absent. Although the invertebrate fauna remains largely unknown, it would appear to be distinctly impoverished. Orthoptera and social wasps (Vespidae), are entirely absent, and Hymenoptera generally, excepting ants, are notably scarce. Pseudoscorpions seem to be entirely absent. One notable beetle is present, the distinctive *Carabus clatratus* L. (Carabidae) which is scattered on the island

While virtually all Irish counties are significantly under-recorded for spiders, this is likely to be particularly true for Co. Donegal, for a variety of reasons. Helsdingen (1996) lists just 96 species, less than 25% of the Irish spider fauna as having been recorded from the county. The only paper devoted specifically to the spiders of Co. Donegal appears to be that of Mackie (1963). Interesting montane spiders have recently been reported from the county by McCormack, Nolan and Regan (2006). It is not surprising therefore that the following lists contains 40 new records for the county.

In this paper, nomenclature follows Merrett and Murphy (2000) and, unless stated

otherwise, specimens were identified using Roberts (1985-1987). Most difficulty was experienced in attempting to identify female *Agyneta* spp. and to a lesser extent male *Monocephalus* spp. and female *Bathyphantes gracilis/parvulus*.

Methods

During the course of the four visits, the author's technique for collecting spiders changed considerably. On the first visit the author, then relatively new to spider recording and consequently inexperienced, collected spiders using a net. This was used to sweep vegetation and was used as a beating tray under low vegetation on banks. I backed this up by collecting a few bags of moss for examination on the mainland, and set a few pitfall traps. The technique used on the subsequent three visits involved beating vegetation into a basin, and very often sieving handfuls of vegetation and moss into the basin. The last method allowed relatively large numbers of especially small spiders to be rapidly collected. The author was generally lucky with the weather on Tory, however on the few rainy days encountered sieved material was bagged and sorted indoors. Every attempt was made to collect only adult spiders, and only a few specimens of spiders which are identifiable in the field were collected. This applies especially to *Segestria senoculata* (L.) and *Textrix denticulata* (Olivier) and to a lesser extent *Enoplognatha ovata* (Clerck) and consequently these species are under-represented in Table 3. Wolf spiders are locally common on the island, and a few of these were collected at the individual sites to check which species were involved. Over the four visits, a total of 1932 identifiable spiders were collected, representing 110 species. The dates of the visits were as follows: Visit 1: July 15-19 2002; Visit 2: March 24-27 2003; Visit 3: May 28-31 2003 and Visit 4: October 25-28 2006. On arrival and departure dates, spiders were collected for a few hours as dictated by the ferry schedule. Poor weather slightly affected collecting on Visit 2, and had a more significant impact on Visit 4. The overall results of the fieldwork are shown in Tables 1-3. Table 1 gives habitat details, grid references and where possible placenames for the 22 sites where collecting was concentrated. Table 2 lists the species collected, and Table 3 the results achieved in each of the 4 collecting trips.

Abbreviations and symbols used

In Table 2, new county records are denoted by an asterisk (*). In Table 3, brackets ( ) are used to denote subadults, juv. denotes juvenile and # denotes distinctive species which were not always collected, and are consequently numerically under-represented.

Notes on individual species

***Pholcus phalangioides* (Fuesslin)**

Searches for this synanthrophic spider eventually turned up a single subadult (not collected) on a toilet wall in the social centre at West Town. Numerous animals were present in October 2006. The few published records for this distinctive animal refer to occurrences in southern counties, however recent fieldwork suggests that it is now widespread and to be found in all parts of Ireland. The species is often present in public house toilets on the mainland, and as such easily searched for. The barman on Tory presented me with an adult from his cellar and told me that it was common at the drinks wholesaler whom he attends on the mainland. It would appear to have greatly increased its range northwards in Ireland during the 20th centuary, no doubt assisted by man.

***Segestria senoculata* (L.)**

With *Textrix*, a frequent spider on Tory, present everywhere except in marshes. Often common among heaped stones on the most exposed sites.

***Oonops domesticus* Dalmas**

A nocturnal search turned up a specimen on the bedroom wall of a bed and breakfast in West Town. Added to the Irish list relatively recently by Smith (1999), and with a small number of subsequent records. Its presence on Tory would suggest that it will prove widespread in Ireland.

***Enoplognatha ovata* (Clerck)**

Frequent around West Town, and scattered elsewhere on the island, but noticeably less in evidence than on the mainland.

***Robertus arundineti* (O. P. - Cambridge)**

Listed from five counties by Helsdingen (1996), and with a few more recent records. *R. arundineti* is likely to prove genuinely scarce in Ireland. So far all the records have been from the northern half of the country.

***Theonoe minutissima* (O. P. - Cambridge)**

A minuscule spider for which there are few published records. However the author has quite a number of unpublished records. I suspect that it is widespread, especially in the north, and often associated with deep moss layers.

***Walckenaeria nodosa* O. P. - Cambridge**

An uncommon spider, until recently only known in Ireland from Co. Monaghan (Pack-Beresford, 1929). However there are a few more recent scattered records. It is a winter maturing, generally wetland species and is likely to be greatly under-recorded.

***Pelecopsis nemoralioides* (O. P. -Cambridge)**

Identified using Locket *et al.* (1974). A coastal site as would be expected for *nemoralioides*, with the almost identical *Pelecopsis nemoralis* (Blackwall) being associated with woodlands.

***Agyneta cauta* (O. P. - Cambridge)**

There are only a handful of Irish records for this spider however it is not very distinct, and could yet prove widespread, especially in the north.

***Maro minutus* O. P. - Cambridge**

Single females of this minute linyphiid were collected from rank vegetation in a sheltered inlet at Tormore in July 2002, and from the Sheeps Hollow in October 2006. Added to the Irish list by Nolan (2000), and with a number of subsequent records. Said to be a rare species, but it would be easy to overlook this tiny spider.

***Taranucnus setosus* (O. P. - Cambridge)**

Although added to the list relatively recently by Mackie (1972), this distinctive spiders is being increasingly reported from Ireland. It seems unlikely that it would have been systematically overlooked by early workers. Possibly it is a relatively recent arrival, or more

likely has increased significantly. In any event, it can now be expected from marshy ground in all parts of the country.

***Araneus diadematus* Clerck**

This normally common spider is remarkably scarce on Tory. Possibly under-recorded around West Town.

***Larinioides patagiatus* (Clerck)**

The only record of this uncommon spider was of a single female swept from a bracken *Pteridium equilinium* (L.) Kuhn stand. Although listed from seven counties, including Donegal, by Helsdingen (1996), *L. patagiatus* seems to be quite a scarce species in Ireland, and I am not aware of any other recent records. The similar *L. cornutus* is widespread on the island, being most common on vegetation overhanging field drains, especially where there is an element of shelter.

***Textrix denticulata* (Olivier)**

Common on Tory and present as a house spider in East Town.

***Hahnia helveola* Simon**

Listed from three Irish counties by Helsdingen (1996), however a number of more recent records would suggest that it is widespread in the country. Occurs in woodland and moorland.

***Amaurobius* sp.**

Although common on the mainland these cribellate spiders were found to be remarkably scarce on Tory, although they could easily be under-recorded in houses. Only two subadults were collected, one of which was raised to maturity to confirm the presence of *fenestralis* (Stroem).

***Clubiona neglecta* O. P. - Cambridge**

Widespread on Tory where it is the only commonly encountered clubionid. A high proportion of the records refer to females with eggs in dead Umbellifer stems.

***Zelotes apricorum* (L. Koch)**

A rare species in Ireland, but possibly under-recorded, especially along the coast. Very

similar to *Zelotes subterraneus* (C. L. Koch), a spider not confirmed from Ireland. The collected adult females were separated from *subterraneus*, with difficulty, using Murphy and Platnick (1986).

***Tibellus* sp.**

Immature *Tibellus* spp. occurred at a number of sites on various visits, however no adults were encountered. Attempts at rearing near adults to maturity proved unsuccessful.

Abnormal spiders

Of the 1823 adult spiders collected, only two could not be identified because of abnormal development of the reproductive organs. One of these was an *Erigone* sp., probably *arctica* (White), with an abnormally developed epigyne, collected among seaweed at site R on visit 4. An intersexual *Agyneta* sp., with abnormally developed palp and epigyne was collected at site K on visit 3.

Discussion

The 110 species recorded from Tory represent in excess of 25% of the Irish fauna and this proportion may seem like a reasonably high total given the scarcity of habitats on the island. However when one bears in mind that this study involved four reasonably intensive collecting trips, and at differing times of the year, the list does not seem particularly long. On the last collecting trip, in October 2006, the list was increased by eight species, so the likelihood must be that some species still remain to be detected on the island. Remarkably 44 of the species, representing 40% of the total were represented by five or fewer individuals, and indeed 19 species were represented by a singleton. The most numerous species collected were *Pocadicnemis pumila* (Blackwall), *E. arctica*, *Agyneta conigera* (O. P.-Cambridge), *Lepthyphantes tenuis* (Blackwall) and *Pachygnatha degeeri* Sundevall, which together comprised over 25% of the material collected. However in the case of *P. pumila* and *E. arctica* the total was increased by the collection of particularly large numbers of individuals on single occasions. Overall 1223 of the adult spiders collected, representing 67% of the total, were money spiders (Linyphiidae).

I have only been able to trace one published reference to the spiders of Tory Island, that of Pack-Beresford (1910), who reports seven species from the island. These were *S. senoculata*, *Monocephalus fuscipes* (Blackwall), *Erigone promiscua* (O. P. - Cambridge), *Centromerus prudens* (O. P. - Cambridge), *Diplostyla concolor* (Wider), *Meta merianae* (Scopoli) and *A. diadematus*, all refound during the present survey, and remarkably all except *S. senoculata* and *M. merianae* judged as being rather scarce on the island. These were collected during the expedition to Tory which had been planned as the highlight of the Irish Field Club Union sixth triennial gathering, based at Rosapenna, Co.Donegal, in July 1910. Sadly, as recounted by Praeger (1910), the Tory visit was almost scuppered by bad weather. Only a few hours collecting were possible on the island, and this in heavy fog. The description of the return trip to the mainland makes for evocative reading. Spiders have been reported from quite a number of other offshore Irish islands, including Lambay, Co. Dublin (Pack-Beresford, 1907), Clare Island, Co. Mayo (Pack-Beresford, 1911), Inishtearaght, Co. Kerry (Parker, 1976) and Cape Clear, Co. Cork (Kennedy and Felton, 1972; Jellasics, 1987). Most of these accounts have been based on relatively brief visits, with the most complete list likely to be the 72 species recorded from Clare Island. Fieldwork in 2002 has however significantly increased the Clare Island total (Myles Nolan, *pers. comm.*).

As might be expected wetland spiders are relatively well represented on Tory, indeed the only notable absentees are *Gnathonarium dentatum* (Wider) and *Porrhomma pygmaeum* (Blackwall). Information contained in Harvey *et al.* (2002) would suggest that both species are also notably scarce on northern British islands. I only briefly searched for the water spider *Argyroneta aquatica* (Clerck) which could easily be present undetected on the island. The remarkably exposed nature of Tory, with the consequent absence of trees and bushes, is likely to account for the absence or rarity of many spiders, notably *Theridion* spp., *A. diadematus* and *Metellina* spp. Both *Metellina* spp. are widespread on the mainland but again relatively scarce on northern British islands. Another remarkable absentee is the littoral *Halorates reprobus* (O. P. - Cambridge). The author has found this spider to be a predictable if local spider around the Irish coast, however again it seems to be surprisingly scarce on British offshore islands.

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TABLE 1. List of sites visited.

Site A: Torbane, B847474, North facing coastal inlet. Relatively sheltered. Spiders mostly beaten from vegetation on small area of accessible cliff and adjacent grassy bank. Spiders collected here on visits 1, 2, 3 and 4.

Site B: B848469, South-east of Loch O Thuaidh. Marsh development on cut over bog. A rich site, with some moss clumps and pools. Drains *via* a narrow stream into the sea. Spiders collected here on visits 1, 2, 3 and 4.

Site C: B848468, field bank bordering site B. Fairly sheltered and with some hard-fern *Blechnum spicant* (L.) clumps. Visits 3 and 4.

Site D: B848471, heather *Calluna vulgaris* (L.) dominated bank adjacent to site B. Visit 3.

Site E: B849471, north-east facing inlet east of Derek Hills Hut. Visit 3.

Site F: B852467, relatively sheltered pathside grassy banks, near West Town. Visit 1, 2 and 4.

Site G: B850463, roadside banks near the Social Centre. Visits 1, 2 and 3.

Site H: B847465, reed *Phragmites australis* (Cav.) stand in rough grassland. Visit 3.

Site I: B844468, exposed field bank with heather *Calluna vulgaris* (L.), hard-fern *Blechnum spicant* (L.) and yellow iris *Iris pseudacorus* L., north of Loch O Dheas. Debris which had accumulated under the *Blechnum* approximated to leaf litter but supported few spiders. Visits 3 and 4.

Site J: B847465, relatively sheltered roadside bank near Loch O Dheas, with well developed heather *Calluna vulgaris* (L.) clumps. Only sampled on visit 4.

Site K: East of Loch O Dheas, B847463. Small area of coarse sandy ground dominated by Marram *Ammophila arenaria* (L.). A rich site for spiders. Dry seaweed here productive for spiders, especially *Erigone* spp. Visits 1, 2, 3 and 4.

Site L: Camusmore Bay, B853460. Coastal grassland, heavily grazed by sheep. Upturned plastic fish boxes sheltered good numbers of spiders. Visit 3.

TABLE 1 (continued)

Site M: West Town, B856464. Walled graveyard, small area of waste ground and houses. Inevitably access difficulties meant that this area was under-recorded. Visits 1, 2, 3 and 4.

Site N: B858462, rank area dominated by angelica *Angelica sylvestris* L. Visit 1.

Site O: B861461, relatively sheltered damp grassland. Visit 1 and 3.

Site P: B862461, south facing exhausted peatland with gravel patches. Species poor. Briefly sampled on visits 1 and 2.

Site Q: Scoltgarhyancaul, B864454. Narrow coastal inlet. Spiders beaten from vegetation on sea cliff and grassy bank which is traversed by a rivulet.Visits 1, 2, 3 and 4.

Site R: Lagrehy Cave, also known as the Sheeps Hollow and the Rams Hollow, B865461. Comprised a collapsed cave, which is exposed to the sea by a narrow north facing opening. The sides and bottom of the depression are the most sheltered habitat on the island. Visits 2, 3 and 4.

Site S: West of Port Doon, B873456. A discrete patch of roadside heath, sheltered by a low bank. Relatively well drained in places, and with numerous stones. Contains a stand of bracken *Pteridium aquilinum* (L.), otherwise scarce on the island. Visits 1, 2, 3 and 4.

Site T: B872452, marshy area bordering lake south east of East Town. The lake is not shown on OS Discovery Series Map 1, or on the map contained in Randall (2004), although in both cases the nearby and much smaller Loch O Thoir is mapped. Visits 1 and 2.

Site U: Port Doon, B877454. Relatively sheltered coastal bank. Adjacent patch of shingle supports *Zelotes*. Visits 1, 2, 3 and 4.

Site V: Tormore, B872452, B877459. Highly exposed coastal headland, with numerous stones, low growing heather *Calluna vulgaris* (L.) and moss clumps. Contains, at 83m, the highest point on the island. Visits 1, 2, 3 and 4.

TABLE 2. List of the spiders of Tory Island, and of the sites where each species were collected.

Species	**Site**
Pholcidae	
**Pholcus phalangioides* (Fuesslin)	M
Segestriidae	
Segestria senoculata (Linnaeus)	G L Q U V
Dysderidae	
Dysdera sp.	M
Harpactea hombergi (Scopoli)	R U
Oonopidae	
Oonops pulcher Templeton	A B C E F G I J O Q R S U
**Oonops domesticus* Dalmas	M
Mimetidae	
**Ero cambridgei* Kulczyński	B F G O
**Ero furcata* (Villers)	B C F S T U
Theridiidae	
Enoplognatha ovata (Clerck)	B G N O Q
Robertus lividus (Blackwall)	E F L T U
**Robertus arundineti* (O. P. - Cambridge)	B
**Pholcomma gibbum* (Westring)	A B C E F I J O R S U
Theonoe minutissima (O. P. - Cambridge)	R
Linyphiidae	
Ceratinella brevipes (Westring)	A B C F G H I J K O R S
Walckenaeria acuminata Blackwall	R V

TABLE 2 (continued).

**Walckenaeria antica* (Wider)	A B C F I K P
**Walckenaeria nodosa* O. P. - Cambridge	B
**Walckenaeria nudipalpis* (Westring)	B Q
**Walckenaeria unicornis* O. P. - Cambridge	B C F G I J O
Walckenaeria vigilax (Blackwall)	Q
Dicymbium nigrum (Blackwall)	K
Dismodicus bifrons (Blackwall)	A B C D F G O Q S
Hypomma bituberculatum (Wider)	B C D E F G I L O P Q T
**Baryphyma trifrons* (O. P. - Cambridge)	B C F G I O Q R
**Gonatium rubens* (Blackwall)	B C J K N O S U
**Maso sundevalli* (Westring)	B
Peponocranium ludicrum (O. P. Cambridge)	A B C D E J N O Q R S U
Pocadicnemis pumila (Blackwall)	A B C D E H I K O Q R U
Oedothorax gibbosus (Blackwall)	B C D G H I
Oedothorax fuscus (Blackwall)	K L
Oedothorax retusus (Westring)	C G K Q R
**Trichopterna thorelli* (Westring)	B
**Pelecopsis nemoralioides* (O. P. - Cambridge)	A F
**Silometopus elegans* (O. P. - Cambridge)	B
**Tiso vagans* (Blackwall)	A K P Q T U
Monocephalus fuscipes (Blackwall)	R
Monocephalus castaneipes (Simon)	A Q R U

TABLE 2 (continued).

Gongylidiellum vivum (O. P. - Cambridge)	B D G K Q R S
**Micrargus subaequalis* (Westring)	F
**Savignia frontata* Blackwall	K
**Diplocephalus permixtus* (O. P.-Cambridge)	B
Araeoncus crassiceps (Westring)	A B D
**Typhochrestus digitatus* (O. P. - Cambridge)	K V
Erigone dentipalpis (Wider)	L
Erigone atra Blackwall	K L R U
Erigone promiscua (O. P. - Cambridge)	C K Q T
Erigone arctica (White)	K
Leptorhoptrum robustum (Westring)	K
Aphileta misera (O. P. - Cambridge)	B H Q
Agyneta subtilis (O. P. - Cambridge)	B D H K R
**Agyneta conigera* (O. P. - Cambridge)	A C D G H I O R T
**Agyneta decora* (O. P. - Cambridge)	B K O
**Agyneta cauta* (O. P. - Cambridge)	D E
**Maro minutus* O. P. - Cambridge	A R
Centromerus prudens (O. P. - Cambridge)	A K
**Centromerus dilutus* (O. P. - Cambridge)	B
**Tallusia experta* (O. P. - Cambridge)	B Q
Centromerita bicolor (Blackwall)	K
Centromerita concinna (Thorell)	A B C K V
**Bathyphantes approximatus* (O.P.-Cambridge)	Q
Bathyphantes gracilis (Blackwall)	A B F K L O Q R T

TABLE 2 (continued).

Bathyphantes parvulus (Westring)	A B C G O
Diplostyla concolor (Wider)	F L
Poeciloneta variegata (Blackwall)	A B C E F G I K O P Q R S U V
**Tapinopa longidens* (Wider)	K L S
Taranucnus setosus (O. P. - Cambridge)	B O
**Stemonyphantes lineatus* (Linnaeus)	B N T
Lepthyphantes minutus (Blackwall)	F
**Lepthyphantes alacris* (Blackwall)	Q
Lepthyphantes obscurus (Blackwall)	R
Lepthyphantes tenuis (Blackwall)	A B C D E F G H K L N O Q R S T U
Lepthyphantes zimmermanni Bertkau	G K R U
**Lepthyphantes cristatus* (Menge)	V
Lepthyphantes mengei Kulczyński	C J N T
Lepthyphantes ericaeus (Blackwall)	A B C E F G H J K L Q R S T U
Linyphia triangularis (Clerck)	B
Neriene clathrata (Sundevall)	K
**Microlinyphia pusilla* (Sundevall)	F
Tetragnathidae	
Tetragnatha extensa (Linnaeus)	B C D E F G K O Q S T
Pachygnatha degeeri Sundevall	A B C D E F G H I J K L O P Q R S T U V
Araneidae	
Metellina merianae (Scopoli)	A C E F G Q R T U

TABLE 2 (continued).

Araneus diadematus Clerck	R U
Larinioides cornutus (Clerck)	B C
Larinioides patagiatus (Clerck)	S
Zygiella x-notata (Clerck)	M
Lycosidae	
Pardosa palustris (Linnaeus)	L
Pardosa pullata (Clerck)	A B C D G H I K L O P S T
Pardosa nigriceps (Thorell)	O P R
Alopecosa pulverulenta (Clerck)	C
Trochosa terricola Thorell	B S U V
Arctosa perita (Latreille)	K
Pirata piraticus (Clerck)	B D O P Q T
Agelenidae	
Textrix denticulata (Olivier)	A F K L Q R U V
Tegenaria domestica (Clerck)	M
Hahniidae	
**Hahnia helveola* Simon	V
Amaurobiidae	
Amaurobius fenestralis (Stroem)	M
Liocranidae	
**Agroeca proxima* (O. P. - Cambridge)	C J
Clubionidae	
Clubiona reclusa O. P. - Cambridge	B C G
Clubiona phragmitis C. L. Koch	K

TABLE 2 (continued).

Clubiona neglecta O. P. – Cambridge	A B C D F G K N O S T U V
Gnaphosidae	
Drassodes cupreus (Blackwall)	S
**Haplodrassus signifer* (C. L. Koch)	A F I
**Zelotes apricorum* (L. Koch)	U
Micaria pulicaria (Sundevall)	S
Philodromidae	
Tibellus sp.	I J O
Thomisidae	
Xysticus cristatus (Clerck)	A B C D F O Q R S U
**Ozyptila trux* (Blackwall)	B D G I K O
**Ozyptila atomaria* (Panzer)	S
Salticidae	
**Heliophanes flavipes* (Hahn)	S U
Euophrys frontalis (Walckenaer)	A R S U V

TABLE 3. Summary of spiders collected on Tory Island.

Species	**July 2002**	**March 2003**	**May 2003**	**October 2006**
	♂/♀	♂/♀	♂/♀	♂/♀
Pholcidae				
P. phalangioides				0/1
Segestriidae				
#*S. senoculata*		1/0	0/(1)	
Dysderidae				
Dysdera sp.	0/(1)			
H. hombergi		0/1	(1)/(6)	1/7
Oonopidae				
O. pulcher	0/4	0/9	6/15	11/14
O. domesticus				0/1
Mimetidae				
E. cambridgei	0/1	4/1	0/3	1/1
E. furcata	2/0	0/1	0/1	1/2
Theridiidae				
#*E. ovata*	3/3		(9)/(2)	
R. lividus	0/8		1/0	
R. arundineti		0/1		1/2
P. gibbum	0/2	2/6	2/10	17/33
T. minutissima			0/7	1/14
Linyphiidae				
C. brevipes		0/5	2/4	3/13

TABLE 3 (continued).

W. acuminata		0/1		1/1
W. antica	0/1	0/3	0/3	1/9
W. nodosa		0/4	0/2	
W. nudipalpis		0/1		2/0
W. unicornis		6/8	0/8	1/9
W. vigilax	0/1			
D. nigrum		0/1		
D. bifrons	0/5	1/0	9/27	
H. bituberculatum	0/7	8/0	7/39	0/1
B. trifrons	0/2		5/12	
G. rubens	2(6)/(9)	0/1	0/2	2/8
M. sundevalli				0/(1)
P. ludicrum	0/3	1/1	0/38	0/2
P. pumila	0/3		17/58	0/1
O. gibbosus		0/1	17/37	0/1
O. fuscus	3/5(2)	0/3		2/8
O. retusus			8/5	
T. thorelli			0/1	
P. nemoralioides		0/1		7/22
S. elegans		2/0	0/4	
T. vagans	2/3	0/2	1/1	3/5
M. fuscipes			0/5	6/13
M. castaneipes		0/1	1/4	6/15
G. vivum		0/3	2/1	0/2
M. subaequalis		0/1		

TABLE 3 (continued).

S. frontata			0/6	
D. permixtus		0/1		0/2
A. crassiceps		0/1	2/1	
T. digitatus		0/1		0/1
E.dentipalpis	1/2	1/0		
E. atra	1/0	2/3	0/1	1/0
E. promiscua	0/4	1/1		1/2
E. arctica	0/3	5/7	0/1	26/44
L. robustum		0/1	1/0	
A. misera		1/0	2/1	
A. subtilis	0/1		6/12	1/0
A. conigera	0/7		29/45	
A. decora		3/3		
A. cauta			2/3	
M. minutus	0/1			0/1
C. prudens		0/1		1/3
C. dilutus				0/1
T. experta		0/1		3/4
C. bicolor		0/1		1/2
C. concinna				9/7
B. approximatus				2/4
B. gracilis	2/4	6/25	3/2	7/2
B. parvulus	0/2		12/5	
D. concolor		5/1		
P. variegata	0/4	3/7	4/13	13/18

TABLE 3 (continued).

T. longidens	0/(1)		0/(1)	0/4
T. setosus	(1)/0		0/1	1/1
S. lineatus	(2)/(1)			
L. minutus	0/(1juv)			
L. alacris				1/0
L. obscurus				(3)/(3)
L. tenuis	17/ 26	9/23	12/31	14/27
L. zimmermanni	13/9	0/1	3/7	1/2
L. cristatus				1/0
L. mengei	2/0			2/5
L. ericaeus	2/2 (1)	2/5	3/10	3/5
L. triangularis	(1)/0			
N. clathrata				0/1
M. pusilla	0/1			0/(1)
Tetragnathidae				
T. extensa	4/7 (2)	(1)/0	6(1)/7(13)	0/1
#P. degeeri	4(1)/10 (1)	7/9	5/18	21/15
Araneidae				
M. merianae	1/3 (3)	1/6(3)	2(1)/6(3)	2(1)/ 3 (4)
A. diadematus	0/(1)	0/(1)	0/(1)	0/(2)
#L. cornutus	0/1		0/2	
L. patagiatus	0/1			
#Z. x-notata	0/3			0/1
Lycosidae				
P. palustris	0/1			
P. pullata	5/21 (1)		16/23	

TABLE 3 (continued).

P. nigriceps	1/2		0/8	
A. pulverulenta			0/1	
T. terricola	0/3	1/0	0/6	
A. perita	(1)/0	0/1		
P. piraticus	12/14		2/2	
Agelenidae				
#T. denticulata		(1)/(3)	2(1)/1	(1)/3 (1)
T. domestica	0/(1)		0/1	
Hahniidae				
H. helveola	0/1			
Amaurobiidae				
A. fenestralis	(1)/0		(1)/0	
Liocranidae				
A. proxima	(1)/(3)		0/(1)	0/2
Clubionidae				
C. reclusa	0/1		3/3	0/1
C. phragmitis	0/2			
C. neglecta	2/26	0/1	2/12	0/4
Gnaphosidae				
D. cupreus	0/4	0/1	0/2	
H. signifer	0/3			(1)/0
Z. apricorum	0/1		(1)/2(1)	
M. pulicaria	0/(1)			
Philodromidae				
Tibellus sp.	0/(1)		(1)/(1)	(1)/(1)

TABLE 3 (continued).

Thomisidae				
X. cristatus	1/4 (1)	0/2	0/8	0/11
O. trux		1/1	2/5	
O. atomaria	0/1			0/4
Salticidae				
H. flavipes	0/1		0/1	
E. frontalis	0/1		1/7	0/2
	80 (14)/ 225 (30)	**73 (2)/160 (7)**	**198 (16)/541 (20)**	**178 (7)/ 368 (13)**
GRAND TOTAL	**529 (39)/ 1294 (70)**			

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A REVIEW OF THE CERAPHRONOIDEA (HYMENOPTERA) INCLUDING TWO SPECIES NEW TO IRELAND

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Introduction

The Ceraphronoidea is poorly known in Ireland and this review provides the first checklist as a contribution towards a checklist of the Irish Hymenoptera. Although no Irish records are cited on the *Fauna Europaea* website, research on the group commenced here in the early eighteen hundreds (Curtis, 1829). Since then, the only other major contribution has been by Fergusson (1980) who added six species of *Dendrocerus* to the fauna. Other workers are mentioned in the text.

The Ceraphronoidea was previously often included within the Proctotrupoidea but are now accepted by most workers as a distinct superfamily. Two families, the Ceraphronidae and Megaspilidae, are recognised. Ceraphronids are usually either solitary endoparasitoids of Diptera, occasionally of Homoptera, Neuroptera and Thysanoptera or hyperparasitic *via* aphidine braconids, microgasterine braconids, chalcidoids and cynipoids (Noyes *et al*., 1999).

Errors or omissions in published records are shown in square brackets. The identities of *C. abdominalis* and *C. obscurus* were confirmed using Alekseev (1988).

Abbreviations used in the text

AHH - A. H. Haliday; AWS - A. W. Stelfox; BMNH - British Museum (Natural History) (Natural History Museum, London); PD - P. Dessart; GEJN - G. E. J. Nixon; JNH - J. N. Halbert; JPOC - J. P. O'Connor; NMI - National Museum of Ireland.

CERAPHRONIDAE

***Aphanogmus nanus* (Nees, 1834)**

synonym *Ceraphron nigriceps* (Thomson, 1858)

WICKLOW: Buckroney, ♀ 22 July 1948, AWS (NMI) (O'Connor, 2007: p. 96 as *Ceraphron nigriceps*).

***Ceraphron opacus* Haliday, 1829** **Nomen dubium**

IRELAND (Curtis, 1829: 249 as *Ceraphron*. Mr Haliday).

***Ceraphron cimicoides* Haliday, 1829** **Nomen dubium**

DOWN: Holywood, AHH (Curtis, 1829: 249 as *Ceraphron*).

***Ceraphron crispus* Haliday, 1829** **Nomen dubium**

DOWN: Holywood, AHH (Curtis, 1829: 249 as *Ceraphron*).

***Ceraphron ferrungineus* Haliday, 1829** **Nomen dubium**

DOWN: Holywood, 8 July, AHH (Curtis, 1829: 249 as *Ceraphron*).

***Ceraphron discolor* Haliday, 1829** **Nomen dubium**

DOWN: Holywood, August and September (Curtis, 1829: 249 as *Ceraphron*).

MEGASPILIDAE

LAGYNODINAE

***Lagynodes pallidus* (Boheman, 1832)**

CORK: Glengarriff, 2♀♀ 1 August 1924, JNH (NMI); **DUBLIN:** Donabate, ♀ (NMI) (O'Connor, 2003: p. 138).

***Lagynodes thoracicus* Kieffer, 1906**

DUBLIN: Lambay, ♀ (O'Connor, 2003: p. 138).

MEGASPILINAE

***Conostigmus abdominalis* (Boheman, 1832)** **New to Ireland**

DUBLIN: The Slade of Saggart, 12 August 1936, AWS (det. PD) (NMI).

***Conostigmus obscurus* (Thomson, 1858)** **New to Ireland**

LEITRIM: Tullaghan, 4 August 1936, under trees, AWS (det. PD) (NMI).

***Conostigmus versicolor* Kieffer, 1907**

DONEGAL: Dunfanaghy (Morley, 1910: p. 185 as *Megaspilus*).

***Dendrocerus aphidum* (Rondani, 1877)**

DUBLIN: Bohernabreena; **LEITRIM:** no locality; **SLIGO:** Trawallua; WICKLOW: Blessington; Tonelagee (all BMNH) (Fergusson, 1980: p. 268).

***Dendrocerus carpenteri* (Curtis, 1829)**

ANTRIM: no locality; **DOWN:** no locality; **DUBLIN:** no locality; **KILDARE:** no locality; **LEITRIM:** no locality; **LONDONDERRY:** no locality; **SLIGO:** no locality; **WICKLOW:** no locality (all BMNH) (Fergusson, 1980: p. 275).

***Dendrocerus flavipes* Kieffer, 1907**

WICKLOW: Athdown; Dowry (both BMNH) (Fergusson, 1980: p. 279).

***Dendrocerus halidayi* (Curtis, 1829)**

DOWN: Holywood, 8 August, AHH (NMI) (Curtis, 1829: 249 as *Ceraphron*. This beautiful little insect I have dedicated to A. H. Haliday, Esq. a zealous advocate of Entomology, whose knowledge of these beautiful tribes is only equalled by the liberality with which it is imparted to others for the advancement of science).

IRELAND (Fergusson, 1980: pp 279 and 281).

***Dendrocerus laevis* (Ratzeburg, 1852)**

WICKLOW: Devil's Glen (BMNH) (Fergusson, 1980: p. 283).

***Dendrocerus rectangularis* (Kieffer, 1907)**

synonym *Dendrocerus dubiosus* (Kieffer, 1907)

DUBLIN: Bohernabreena; Grand Canal; Marlfield [Mantfield]; Phoenix Park; **KILDARE:** Royal Canal, Landenstown; **[SLIGO]:** Trawallua [Trawallna]; **LONGFORD:** Castle Forbes; **WICKLOW:** Ballyknockan; Dowry (both BMNH) (Fergusson, 1980: p. 278 as *dubiosus*).

***Dendrocerus serricornis* (Boheman, 1832)**

DUBLIN: Grand Canal; **LEITRIM:** no locality; **WICKLOW:** Killegar (BMNH) (Fergusson, 1980: p. 292).

***Megaspilus dux* (Curtis, 1829)**

IRELAND (Curtis, 1829: 249 as *Ceraphron*. Mr Haliday).

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SOME DISTRIBUTIONAL RECORDS FOR IRISH AMPHIPODA

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Over the course of several years, the author (JMCH in this list) has collected amphipods, either as part of general collecting or specifically searching for selected species. As a by-product, this has resulted in the accumulation of a certain amount of distributional data, with notes on habitat, method of collecting and time of year. Gathered together in a systematic list, these data may be useful to amphipod workers in the future.

The information for this list has been compiled from various sources. Mostly, it is derived from the collections made by JMCH at sites around Ireland. Much of the material was collected by light-trap (Holmes and O'Connor, 1988). Amphipods are strongly attracted to the trap. Some of the species taken are regarded as rare, but this may be because they are seldom found using conventional collecting methods. Records from the Lough Hyne marine nature reserve are not included.

These data have not been published before. However, some distributional generalities, based on a portion of the present data, were published in Costello, Holmes, McGrath and Myers (1990). For example, there were two specimens of the amphipod *Nanonyx goesi* (Boeck) collected by the author in Dalkey Sound (O272265), using an underwater light-trap, at 5m depth, on sand and stones near *Laminaria* in a strong current, on 15 September 1985. This was listed in Costello *et al.* (1990) as "Dublin Bay (JMCH)", without any further elaboration. Perhaps, as a general guideline, there should be sufficient detail published to enable future students of the group to revisit the site and stand some chance of successfully recollecting the species. The time of year might be significant. The method of collecting may make a difference.

Some of the data is gleaned from the collections in the Natural History Division of the National Museum of Ireland (NMI), which has a number of amphipods in its reserve

collections. The distributional information with this older material tends to be quite general and is often vague, but the present list adds further details to the summaries in O'Riordan (1970) and Costello *et al*. (1990).

The author has had the opportunity to examine some of the Irish amphipods housed in the Oxford University Museum (OUM). The material was part of the Thomas Bell collection and contains specimens, mostly from Northern Ireland, from such collectors as William Thompson, Robert Patterson and George Hyndeman. It may be more than 150 years old, but is still valid.

Amphipod families are listed systematically. Genera and species are listed alphabetically within families. Records are listed county by county, following the convention of the journal.

Material lodged in the Collections of the Natural History Museum, National Museum of Ireland, is indicated (NMI).

AMPHIPODA

GAMMARIDEA

Urothoidae

***Urothoe elegans* (Bate, 1856)**

CORK: Log 35, West Channel (W2-3-), Glandore Harbour, tow-net "Lord Bandon", 7 July 1886, R.I.A. (NMI); Station 28.0778, nine miles south of Old Head of Kinsale, 54 fathoms, 17 December 1978, R. Grainger (NMI); off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DONEGAL:** Stations 31O (C190396), 32J (C185395), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); **DUBLIN:** off Howth (O3136), (Decca 3B I12H45), very coarse sand and pebbles, 4 May 1978, M. M. Parker (NMI); south Dublin Bay (O2827), 12.5m, sand, 31 March 1982, 6 May 1982, J. G. Wilson; off Scotsman's Bay (O265296), Dublin Bay, 14m, fine sand, RV "Lough Beltra", 11 September 1992, JMCH; **GALWAY:** North Beach Bay (L522657), Inishbofin, light-trap, 4m, 8 August 1993, JMCH; **KERRY:** Log 55, mouth of Kenmare River, 23-35 fathoms, "Lord Bandon", 14 July 1886, R.I.A. (NMI); **LOUTH:** Carlingford, (Decca 3B J16E40), coarse sand and stones, 3 May 1978, M. M. Parker (NMI).

***Urothoe marina* (Bate, 1857)**

CORK: Log 40, Long Island Sound, 3½-5 fathoms, fine sand and seaweed, "Lord Bandon", 8 July 1886, R.I.A. (NMI); off Cork Harbour (W8540), (Decca 7D I10E68), coarse sand and mud, 27 April 1978, M. M. Parker (NMI); Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH.

Phoxocephalidae

***Harpinia antennaria* Meinert, 1890**

CORK: off Cork Harbour (W8556), (Decca 7D H22E62), gravel and coarse sand, 26 April 1978, M. M. Parker (NMI); off Cork Harbour (W8649), (Decca 7D I2E68), medium sand and gravel, 27 April 1978, M. M. Parker (NMI); **DUBLIN:** Balbriggan (O3068), (Decca 3B I18G39), sandy mud, 4 May 1978, M. M. Parker (NMI); Lough Shinny (O3157), (Decca 3B I16H30), soft sandy mud, 4 May 1978, M. M. Parker (NMI); off Howth (O3136), (Decca 3B I12H45), very coarse sand and pebbles, 4 May 1978, M. M. Parker (NMI); south Dublin Bay (O2827), 12.5m, sand, 19 February 1981, 1 April 1981, 13 May 1981, 26 May 1981, 22 June 1981, 21 July 1981, 7 September 1981, 28 September 1981, 4 November 1981, 3 December 1981, March 1981, 20 January 1982, 16 February 1982, 25 March 1982, 31 March 1982, 6 May 1982, 15 June 1982, J. G. Wilson (NMI); Dublin Bay (O2633), (Decca 3B I16H46), 14 November 1992, J. G. Wilson; **KERRY:** Log 55, mouth of Kenmare River, 23-35 fathoms, "Lord Bandon", 14 July 1886, R.I.A. (NMI); **LOUTH:** off Termonfeckin (O2384), (Decca 3B J6F44), soft mud, 3 May 1978, M. M. Parker (NMI); **MEATH**: off Drogheda (O2774), (Decca 3B J0G33), soft dark mud, 3 May 1978, M. M. Parker (NMI); Drogheda (O2276), (Decca 3B J6G30), muddy fine sand, 3 May 1978, M. M. Parker (NMI).

***Harpinia crenulata* (Boeck, 1871)**

DUBLIN: south Dublin Bay (O2827), 12.5m, sand, 28 September 1981, J. G. Wilson (NMI).

***Harpinia pectinata* G. O. Sars, 1891**

CORK: off Cork Harbour (W8744), 57°39.16'N. 08°12.2434'W., (Decca 7D I6E68), mud and shell gravel, 27 April 1978, M. M. Parker (NMI).

***Metaphoxus simplex* (Bate, 1857)**

CORK: Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH (NMI); **KERRY:** Knightstown (V4277), Valentia, light-trap, 3m, 21 July 1986, JMCH (NMI).

***Parametaphoxus fultoni* (T.Scott, 1890)**

CORK: Faha (V828484), Bantry Bay, exposed rocky shore, 28 July 1985, JMCH; Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DONEGAL:** Station 11K (C186416), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); **DUBLIN:** off Howth (O3136), (Decca 3B I12H45), very coarse sand and pebbles, 4 May 1978, M. M. Parker (NMI); Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, 3 March 1978, 26 October 1978, 9 January 1979, 20 May 1979, D. McGrath; Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl dunes, 19 May 1980, September 1980, 6-7 December 1981, D. McGrath; south shore of Killary Harbour, light-trap, 6m, 19 July 1989, D. Minchin; **KERRY:** Knightstown (V4277), Valentia, light-trap, 3m, 21 July 1986, JMCH; **MAYO:** Westport Bay, Clew Bay, 8 June 1980, D. Minchin; Inner Clew Bay, 17 February 1988, D. Minchin.

Lysianassidae

***Acidostoma nodiferum* Stephensen, 1923**

CORK: 10-15 miles south east of Cork Harbour (Decca 7D I10E74), coarse sand, clay and gravel, 27 April 1978, M. M. Parker (NMI).

***Acidostoma obesum* (Bate and Westwood, 1861)**

CORK: Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH (NMI); **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 21 July 1981, J. G. Wilson (NMI); Dublin Bay (O2633), (Decca 3B I16H46), 2 April 1984, 14 November 1992, J. G. Wilson (NMI).

***Aristias neglectus* Hansen, 1887**

GALWAY: Station S.R.146, 80 miles west-north-west of Slyne Head, 53°24′N. 12°29′W., 181 fathoms, 24 August 1904, Fisheries (NMI); **KERRY:** 5-8 miles west of Great Skellig, 70-80 fathoms, fine muddy sand, 13 July 1886, R.I.A. (NMI).

***Euonyx chelatus* Norman, 1867**

IRELAND: off west coast of Ireland, 1890-1891, R.D.S. (NMI).

***Hippomedon denticulatus* (Bate, 1857)**

CORK: Log 22, seven miles south-south-west of Dursey Head, 40 fathoms, coarse sand, August 1885, R.I.A. (NMI); DOWN: north-west Irish Sea, 1982, Fisheries; **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 26 May 1981, 6 May 1982, J. G. Wilson (NMI); **KERRY:** *circa* 12 miles south-west of Great Skellig, 70 fathoms, muddy sand, August 1885, R.I.A. (NMI); **WATERFORD:** Station 16.0778, 24 miles south of Sheep Island, west of Tramore, 45 fathoms, 16 December 1978 R. Grainger (NMI).

***Ichnopus spinicornis* Boeck, 1861**

CORK: Station 33.0279, 15 miles south-south-east of Roche's Point, 90m, 26 January 1979, R. Grainger (NMI).

***Lepidepecreum longicorne* (Bate and Westwood, 1861)**

CORK: off Cork Harbour (W8452), (Decca 7D I2E62), gravel to coarse shell sand, 26 April 1978, M. M. Parker (NMI).

***Lysianassa ceratina* (A. O. Walker, 1889)**

ANTRIM/DOWN: entrance to Belfast Bay, dredge, 80 fathoms, 4 July 1846, G. C. Hyndman (OUM); **CORK:** Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Narrows (W017259), Kinish Harbour, Sherkin Island, 30 June 1980 (NMI); Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; **DONEGAL:** Station 31I (C184396), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); **DOWN**: Strangford Lough, 9 September 1837, W. Thompson (OUM); **DUBLIN:** Malahide Inlet, 2-3 fathoms, 27

July 1908, Dublin Bay Marine Biological Committee (NMI); the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; **GALWAY:** Bofin Harbour (L5364), 18 April 1899, Fisheries (NMI); Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath; **KERRY:** Beginish Point (V4078), October 1975, D. Minchin; Kilmakilloge, Kenmare Bay, 1982, D. Minchin; Knightstown (V4277), Valentia, light-trap, 3m, 21 July 1986, JMCH; **MAYO:** Bellacragher, Inner Clew Bay, 4-6 June 1980, D. Minchin; Inner Clew Bay, 4 August 1982, D. Minchin; **WATERFORD:** Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH; **WEXFORD:** Kilmore Quay, 26 April 1982, D. Minchin.

***Lysianassa plumosa* Boeck, 1871**

GALWAY: Kilkieran Bay (L8-3-), Pseudocucumis-ground, 9 January 1979, D. McGrath (NMI); Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath (NMI); **LOUTH:** Carlingford Lough, (Decca 3B J16E40), coarse sand and stone, 3 May 1978, M. M. Parker (NMI).

***Nannonyx goesi* (Boeck, 1871)**

CORK: Narrows (W017259), Kinish Harbour, Sherkin Island, 30 June 1980 (NMI); **DUBLIN:** Malahide Inlet, 2-3 fathoms, 27 July 1908, Dublin Bay Marine Biological Committee, (NMI); the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH (NMI); Dalkey Sound (O272265), light-trap, 5m, sand and stones near *Laminaria* in strong current, 15 September 1985, JMCH.

***Orchomene humilis* (Costa, 1853)**

GALWAY: Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath (NMI); Pol an Choirre (L7630), Mweenish Island, Kilkieran Bay, ascidian *Ciona intestinalis* (L.), 14 December 1982, M. White (NMI).

***Orchomenella nana* (Krøyer, 1846)**

CORK: Log 32, Bantry Harbour, 4-6 fathoms, mud, August 1885, R.I.A. (not Ballycottin (sic) Harbour as stated in O'Riordan (1970) (NMI); Log 40, Long Island Sound, 3½-5 fathoms, fine sand and seaweed, "Lord Bandon", 8 July 1886, R.I.A. (NMI); Mulroe Cove (V9240), near

Durrus, Dunmanus Bay, from dead crab, 13 August 1979, JMCH (NMI); Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DOWN:** Portaferry (J592507), end of the ferry pier, light-trap, 1.5m, 12 March 1987, F. Jeal; **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 3 December 1981, 31 March 1982, 6 May 1982, J. G. Wilson; the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH; near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH; Broadmeadow (O224468), light-trap, 2m, mud, 23 September 1984, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH (NMI); south Dublin Bay (O2-3-), trawl, 20m, RV "Celtic Voyager", 17 July 1998, JMCH; **GALWAY:** Fahy Bay (L6658), Ballynakill, 28 July 1982, D. Minchin; **KERRY:** Kilmakilloge, Kenmare Bay, 1982, D. Minchin; Knightstown (V4277), Valentia, light-trap, 3m, 21 July 1986, JMCH; **WEXFORD:** Station 11.0578, 15 miles south-east of Carnsore Point, 15 October 1978, R. Grainger (NMI).

***Perrierella audouiniana* (Bate, 1857)**

CORK: Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Narrows (W017259), Kinish Harbour, Sherkin Island, 30 June 1980 (NMI); Roaringwater Bay (W0130), 51°31′N. 09°25.12′W., 3 July 1980 (NMI); **DONEGAL:** Station 55M (C188372), Mulroy Bay, 1985, D. Minchin; **KERRY:** Log 21, between Bull Rock and Great Skellig, mouth of Kenmare River, 48 fathoms, fine sand, August 1885, R.I.A. (NMI); **MAYO:** Inner Clew Bay, 5-6 June 1980, 17 February 1988, D. Minchin.

IRELAND: west coast of Ireland, July 1840, W. Thompson (OUM).

***Scopelocheirus hopei* (Costa, 1851)**

CORK: Log 22, seven miles south-south-west of Dursey Head, 40 fathoms, "Lord Bandon", August 1885, R.I.A. (NMI); **DUBLIN:** Malahide, 9 September 1885 (NMI); **MAYO:** 28 miles

north-west of Achill Head, 154 fathoms, sand, 20 April 1891, R.D.S. (NMI); **WATERFORD:** Station 24.0678, 16 miles south of Mine Head, 79m, 29 November 1978, R. Grainger; Station 16.0379, 24 miles south of Dunmore East, 39 fathoms, 13 February 1979, R. Grainger; **WEXFORD:** Station 7.0678, four miles south-south-east of Tuskar Rock, 78m, 27 November 1978, R. Grainger (NMI); Station 30.1381, 24 miles south of Hook Head, 51°44′N. 6°47′W., 29 October 1981, R. Grainger (NMI).

***Socarnes erythrophthalmus* Robertson, 1892**

CORK: Roaringwater Bay (W0130), 51°31′N. 09°25.12′W., 3 July 1980 (NMI); Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; Roaringwater Bay, 5m, maerl bed, August 1998, S. de Grave; **DOWN:** Ballyhenry Bay (5751), Strangford Lough, light-trap, 1m, on wreck, 21 April 1984, F. Jeal (NMI); **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, 3 March 1978, 26 October 1978, 9 January 1979, 16 March 1979, 20 May 1979, 19 May 1980, D. McGrath; Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl beds, September 1980, 20 August 1981, D. McGrath.

***Tmetonyx cicada* (O. Fabricius, 1780)**

MAYO: 28 miles north-west of Achill Head, 154 fathoms, sand, 20 April 1891, R.D.S. (NMI); 45 miles north-north-west of Black Rock, 250 fathoms, May 1891, R.D.S. (NMI).

***Trischizostoma nicaeense* (Costa, 1853)**

KERRY: Station S.R.1237, 69 miles west by north of Tearaght Light, 51°54′N. 12°29′W., medium otter trawl, 450 fathoms, 12 August 1911, Fisheries (NMI).

***Tryphosella lowryi* Kilgallen, Myers and McGrath, 2006**

DONEGAL: Mulroy Bay, summer 1980, D. Minchin (NMI).

Costello *et al*. (1990) recorded *Tryphosella horingii* (Boeck) from Co. Donegal, based on a single specimen found in Mulroy Bay by Dr Dan Minchin (NMI). This specimen was re-examined recently and belongs to the newly-described species *T. lowryi* (Kilgallen *et al*., 2006). *T. horingii* has not been reliably found in Ireland.

***Tryphosella sarsi* Bonnier, 1893**

CORK: Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH;

Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; **DONEGAL:** Station 7J (C185420), North Basin, Mulroy Bay, sea bed, 31 August 1980, D. Minchin (NMI); **DUBLIN:** Malahide, 9 September 1885 (NMI); Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, 23 November 1977, 3 March 1978, 16 March 1979, 20 May 1979, D. McGrath; Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath; Spiddal, west of pier (M1221), light-trap, 5m, sand, 17 June 1991, JMCH; **MAYO:** Inner Clew Bay, 4 August 1982, D. Minchin; Rosstoughy, Inner Clew Bay, 17 February 1988, D. Minchin; **WATERFORD:** Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH.

***Tryphosites longipes* (Bate and Westwood, 1861)**

KERRY: Station 115, off the Skelligs, 51°44′N. 10°43.5-41′W., 80 fathoms, sand and mud, 19 August 1890, R.D.S. (O'Riordan, 1970) (NMI).

Pontoporeiidae

***Bathyporeia elegans* Watkin, 1938**

DUBLIN: off Malahide (O2945), (Decca 3B I15H38), hard fine sand, 4 May 1978, M. M. Parker (NMI); near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; **GALWAY:** Spiddal, west of pier (M1221), light-trap, 5m, sand, 17 June 1991, JMCH.

***Bathyporeia guilliamsoniana* (Bate, 1856)**

CORK: Log 22, seven miles south-south-west of Dursey Head, 40 fathoms, "Lord Bandon", August 1885, R.I.A. (NMI); Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 16 February 1982, J. G. Wilson (NMI); near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH (NMI); the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982,

JMCH; **WATERFORD:** Dungarvan, 2 December 1978, J. G. Wilson.

***Bathyporeia nana* Toulmond, 1966**

DUBLIN: south Dublin Bay (O2827), 12.5m, sand, 16 February 1982, J. G. Wilson (NMI); near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH (NMI).

***Bathyporeia pelagica* (Bate, 1856)**

CORK: Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; **DONEGAL:** Marble Hill Beach (C0636), 10 June 1980, JMCH (NMI); **DUBLIN:** North Bull Island (O2-3-), 1974, JMCH (NMI); south Dublin Bay (O2827), 12.5m, sand, March 1981, 25 March 1982, 6 May 1982, J. G. Wilson; the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 9 January 1983, JMCH; near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH; Portmarnock strand (O2443), mid-shore sand, 10 September 1988, JMCH; Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH; **GALWAY:** Spiddal, west of pier (M1221), light-trap, 5m, sand, 17 June 1991, JMCH.

***Bathyporeia pilosa* Lindström, 1855**

DONEGAL: Station 32J (C185395), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); **DUBLIN:** North Bull Island (O2-3-), 1974, JMCH (NMI); **WATERFORD:** Dungarvan, 2 December 1978, J. G. Wilson.

***Bathyporeia tenuipes* Meinert, 1877**

DUBLIN: off Malahide (O2945), (Decca 3B I15H38), hard fine sand, 4 May 1978, M. M. Parker (NMI); south Dublin Bay (O2827), 12.5m, sand, 4 November 1981, 16 February 1982, 25 March 1982, 15 June 1982, J. G. Wilson; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; **MEATH:** Drogheda (O2276), (Decca 3B J6G30), muddy fine sand, 3 May 1978, M. M. Parker (NMI).

Haustoriidae

***Haustorius arenarius* (Slabber, 1769)**

CORK: Red Strand (W3533), Dirk Bay, mid-shore sand, 28 July 1981, 16 July 1985, JMCH (NMI); **DONEGAL:** Marble Hill Beach (C0636), 10-11 June 1980, JMCH (NMI); WATERFORD: Dungarvan, 2 December 1978, J. G. Wilson.

Gammaridae

***Echinogammarus marinus* (Leach, 1815)**

CORK: Glengarriff, May 1891, R. F. Scharff (NMI); Colla Harbour (V917292), near Schull, 4 September 1970, JMCH; Ring (W4140), near Clonakilty, 9 September 1970, JMCH; Youghal, 15-16 April 1972, JMCH; Ballyrisode (V8430), Toormore Bay, August 1979, JMCH; the Narrows (W017259), Kinish Harbour, Sherkin Island, 1 July 1980, JMCH (NMI); Baltimore (V0426), shore, 14 August 1986, JMCH; Kinsale, net sweep, 14 August 1991, P. Galvin; **DONEGAL:** Port-na-Blagh (C0437), rocky shore, 7 June 1980, JMCH; **DOWN:** Portaferry, March 1972, JMCH (NMI); **DUBLIN:** Lambay Island (O3-5-), A. R. Nichols (NMI); Sandycove (O260280), 22 October 1970, JMCH; Seapoint (O227291), 1 July 1986, D. Murphy; **GALWAY:** Dogs Bay (L6938), 9 April 1983, JMCH; **KERRY:** Dingle (Q4-0-), shore, 22 July 1978, JMCH; Templenoe (V8469), near Kenmare, 10 September 1970, JMCH; **MAYO:** Dorinish (L9285), shore, 25 September 2000, JMCH; **WATERFORD:** Dungarvan, 2-3 December 1978, J. G. Wilson.

***Echinogammarus pirloti* (Sexton and Spooner, 1940)**

CLARE: near Liscannor (R0-8-), 1 June 1975, JMCH; **CORK:** Youghal, 15-16 April 1972, JMCH; Bumer Rocks, Courtmacsherry Bay, January 1980, J. Dorman; Kilcrohane (V8237), Dunmanus Bay, 6 July 1980, JMCH (NMI); **DONEGAL:** Tory Island (B8-4-), 12 July 1910, R. Welch (NMI); **KERRY**: Waterville (V4966), holdfast, 29 September 2000, JMCH (NMI); **MAYO:** Ballinglen River (G1039), near Ballycastle, 27 August 1970, R. E. and R. M. Blackith (NMI).

***Echinogammarus stoerensis* (Reid, 1938)**

CORK: Youghal, 15 April 1972, JMCH (NMI).

***Eulimnogammarus obtusatus* (Dahl, 1938)**

CORK: Youghal, 16 April 1972, JMCH; Ballyrisode (V8430), Toormore Bay, August 1979, JMCH; Quarry Point (W5240), Courtmacsherry Bay, February 1980, J. Dorman; **DOWN:** Portaferry, under stones on muddy shore, March 1972, JMCH; **DUBLIN:** Lambay Island (O3-5-), A. R. Nichols (NMI); Sandycove (O260280), 22 October 1970, JMCH (NMI); Portrane (O2549), shore, 24 October 1981, JMCH (NMI); **KERRY:** Valentia, 23 May 1979, D. Minchin; **MAYO:** Dorinish (L9285), shore, 25 September 2000, JMCH.

***Gammarus chevreuxi* Sexton, 1913**

WEXFORD: South Slob, 29 July 1991, P. Galvin.

***Gammarus duebeni* Liljeborg, 1852**

CLARE: Lough Murree (M2511), 6 April 1985, J. P. O'Connor; **CORK:** Kilkeran Lake (W338341), inflowing stream, 27 July 1981, JMCH; Baltimore (V0426), shore, 14 August 1986, JMCH; **DERRY:** Kilrea (C9312), July 1839, W. Thompson (OUM); **DONEGAL:** Glencolumbkille (G5284), 29 March 1983, D. C. F. Cotton; **DUBLIN/WICKLOW:** Brittas River (O0321), C. O'Keeffe, 11 February 1980; **GALWAY:** Spiddal (M1221), stream flowing onto beach, 10 April 1983, JMCH; **KERRY:** Lough Anscaul (Q5804), 20 July 1978, JMCH; Taihe Fort, near Derrynane, stream, 31 May 1992, JMCH; **LEITRIM:** Kilnamar Lake (H261063), 16 August 1991, S. Wistow; **MAYO:** Carrownisky strand (L752778), brackish ditch behind dunes, 26 August 1987, JMCH; Doo Lough (L8368), 26 July 2000, JMCH; **SLIGO:** Slish Wood (G7331), 10 March 1983, D. C. F. Cotton; Lissadell Plantation (G6345), stream below lake, 23 March 1983, D. C. F. Cotton; Keelogyboy (G7737), 24 March 1983, D. C. F. Cotton; Carrownanny Lough (G5523), near Coolaney, 1 April 1983, D. C. F. Cotton; Lough Achree (G5129), Ox Mountains, 23 April 1983, D. C. F. Cotton (NMI); **WATERFORD:** Dunmore East (S6800), seepage at kittiwake nests, 31 June 1983, J. P. O'Connor; **WESTMEATH:** Lough Ennell (N4147), 29 August 1987, JMCH; **WEXFORD:** South Slob, 29 July 1991, P. Galvin; **WICKLOW:** Blackditch Wood (O3102), Murrough, wet leaf-litter, 2 February 1989, R. E. and R. M. Blackith.

IRELAND: Lough Neagh, August 1840, W. Thompson (OUM).

***Gammarus finmarchicus* Dahl, 1938**

CORK: Youghal, 16 April 1972, JMCH; **DOWN:** East shore of Strangford Lough (J5-5-), muddy shore, March 1972, JMCH.

***Gammarus lacustris* G. O. Sars, 1864**

KILDARE: Pollardstown Fen (N7616), 9 April 1989, JMCH (NMI); **WESTMEATH:** Lough Owel (N4256), *Chara*, 24 September 1970, 7 November 1970, JMCH (NMI); White Lake (N5273), littoral zone, C. O'Keeffe, 25 February 1981 (NMI); Lough Lena (N5168), C. O'Keeffe, February 1981 (NMI).

***Gammarus locusta* (L., 1758)**

ANTRIM: Larne, 1838, R. Patterson (OUM); **CLARE:** Lehinch strand (R0987), 9 August 1982, JMCH; **CORK:** Donore Strand (W3841), near Clonakilty, 3 September 1970, JMCH; Youghal, 15-16 April 1972, JMCH; Toormore Bay (V8430), August 1977, JMCH; Rosscarbery strand (V297352), floating weed off beach, 4 August 1981, JMCH; Courtmacsherry Bay, gut contents of garfish *Belone belone* (L.), 22 September 1981, J. Dorman; Courtmacsherry Bay, drift weed at sea, June 1983, J. Dorman; Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; Kinsale, sweep/weed, 14 August 1991, P. Galvin; **DONEGAL:** Station 19K (C186408), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); **DOWN:** east shore of Strangford Lough (J5-5-), March 1983, under weed on sand, JMCH (NMI); **DUBLIN:** Malahide, 9 September 1885 (NMI); Killiney Beach (O2624), littoral gravel at low tide near freshwater outflow, 10 June 1979, JMCH; the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH; Booterstown marsh (O2129), stream, 4 January 1983, J. Watterson; near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; half a mile east of the Muglins, 30 May 1993, I. Lawler; **GALWAY:** Spiddal, west of pier (M1221), light-trap, 5m,

sand, 17 June 1991, JMCH; **KERRY:** Brandon Bay, 21 July 1978, JMCH; Castlegregory (Q6-1-), Tralee Bay, 21 July 1978, JMCH; Dingle (Q4-0-), shore, 22 July 1978, JMCH; Ventry (Q3800), shore, 22 July 1978, JMCH; Tralee, October 1981, D. Minchin; **MAYO:** Bellacragher, Inner Clew Bay, 6 June 1980, D. Minchin; **WATERFORD:** Dungarvan, 2 December 1978, J. G. Wilson; **WEXFORD:** Ballyteige (S935065), estuarine mud, 5 June 1988, JMCH.

***Gammarus pulex* (L.)**

ARMAGH: River Bann (J0153), Portadown, 25 October 1970, JMCH (NMI).

***Gammarus salinus* Spooner, 1947**

CORK: Clonakilty, reed swamp, 1991, P. Galvin (NMI); **DUBLIN:** Main Pond, Booterstown marsh (O2129), brackish water, 15 February 1983, J. Watterson (NMI).

***Gammarus tigrinus* Sexton, 1939**

ANTRIM: Antrim Bay (J1485), shallow-water *Elodea*, 24 October 1970, JMCH (NMI).

***Gammarus zaddachi* Sexton, 1912**

CORK: Baltimore (V0426), shore, 14 August 1986, JMCH; **DUBLIN:** Booterstown marsh (O2129), stream, 4 January 1983, J. Watterson; **KILKENNY:** River Nore, Inishtioge (S6437), 26 June 1986, D. Murphy; **MAYO:** Glenamoy River (F8-3-), 9 July 1970, R. E. and R. M. Blackith; Lough Furnace estuary (L966958), 11 October 1970, 7 November 1970, shallow brackish water by bridge, 28 August 1987, JMCH (NMI); **WEXFORD:** Ballyteige (S935065), estuarine mud, 5 June 1988, JMCH; Ballyteige (S935065), light-trap, 1m, 6 June 1988, JMCH.

***Pectenogammarus planicrurus* (Reid, 1940)**

CORK: Youghal, 16 April 1972, JMCH (NMI); **DUBLIN:** Killiney Beach (O2624), littoral gravel at low tide near freshwater outflow, 10 June 1979, JMCH (NMI); the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 9 January 1983, JMCH; near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH; **WICKLOW:** Greystones (O2912), September 1979, JMCH; Greystones (O294129), light-trap, 3m, 26 September 1982, JMCH.

Crangonyctidae

***Crangonyx pseudogracilis* Bousfield, 1958**

DUBLIN: People's Garden, Phoenix Park (O1334), pond, 5 November 1977, JMCH (NMI); Ballybough Bridge (O1635), Royal Canal, Dublin, February 2005, P. Ashe.

Niphargidae

***Niphargus kochianus* Bate, 1859**

GALWAY: Clarinbridge, 23 August 1979, J. N. R. Grainger (NMI).

Eusiridae

***Apherusa bispinosa* (Bate, 1856)**

ANTRIM/DOWN: Belfast Bay, dredge, 20 fathoms, 17 September 1847, G. C. Hyndman (OUM); **CORK:** Log 35, West Channel (W2-3-), Glandore Harbour, tow-net, "Lord Bandon", 7 July 1886, R.I.A. (NMI); Station 46.0379, Bantry Bay, 22 February 1979, R. Grainger; Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH; Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DONEGAL:** the Wee Sea (C1939), Mulroy Bay, July 1984, P. Somerfield; **DOWN:** Ballyhenry Bay (5751), Strangford Lough, light-trap, 1m, on wreck, 21 April 1984, F. Jeal; Portaferry, end of the ferry pier (J592507), light-trap, 1.5m, 12 March 1987, F. Jeal; Portaferry (J5950), light-trap, 10 October 1987, F. Jeal; **DUBLIN:** the 'Forty-Foot' (O259281), Sandycove, light-traps, 10m, 5 September 1982, 9 January 1983, JMCH (NMI); Broadmeadow (O224468), light-trap, 2m, mud, 23 September 1984, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; Sandycove (O260280), rock-pool, 24 June 1989, JMCH; Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH; Dalkey Sound (O2726), 8 November 1992, I. Lawler; **GALWAY:** Kilkieran Bay (L8-3-),

Pseudocucumis-ground, 9 January 1979, 20 May 1979, D. McGrath; Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl dunes, 19 May 1980, 20 August 1981, D. McGrath; Spiddal, west of pier (M1221), light-trap, 5m, sand, 17 June 1991, JMCH; North Beach Bay (L522657), Inishbofin, light-trap, 4m, 8 August 1993, JMCH; **KERRY:** Knightstown (V4277), Valentia, light-trap, 3m, 21 July 1986, JMCH; **WATERFORD:** Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH; **WICKLOW:** Greystones (O294129), light-trap, 3m, 26 September 1982, JMCH.

***Apherusa cirrus* (Bate, 1862)**

CORK: off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH (NMI); **GALWAY:** North Beach Bay (L522657), Inishbofin, light-trap, 4m, 8 August 1993, JMCH.

***Apherusa henneguyi* Chevreux et Fage, 1925**

CORK: Station 26.0678, 17 miles south of Capel Island, 90m, 29 November 1978, R. Grainger (NMI); **WATERFORD:** Station 24.1381, 16 miles south of Tramore Bay, 51°52′N. 07°13′W., 28 October 1981, R. Grainger; **WEXFORD:** Station 30.1381, 24 miles south of Hook Head, 51°44′N. 6°47′W., 29 October 1981, R. Grainger (NMI).

***Apherusa jurinei* (H.Milne Edwards, 1830)**

CORK: Sherkin Island Marine Station jetty (W0025), *Gigartina*, lower shore, 14 October 1978, P. Leahy; Melmane (W5141), Quarry Point (W5240), and Argideen, Courtmacsherry Bay, February 1980, J. Dorman; Red Strand (W358321), Dirk Bay, fucoids in rock-pools, 2 August 1981, JMCH; Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Narrows (W017259), Kinish Harbour, Sherkin Island, 1 July 1980, JMCH (NMI); Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; Kinsale, net sweep, 4 August 1991, P. Galvin; **DONEGAL:** Port-na-Blagh (C0437), *Corallina* in rock pools, 7 June 1980, 13 June 1980, JMCH (NMI); **DOWN:** the Dorn (J5959), Strangford Lough, March 1983, F. Jeal; Ballyhenry Bay (5751), Strangford Lough, light-trap, 1m, on

wreck, 21 April 1984, F. Jeal; Portaferry, end of the ferry pier (J592507), light-trap, 1.5m, 12 March 1987, F. Jeal; Portaferry (J5950), light-trap, 10 October 1987, F. Jeal; **DUBLIN:** North Bull Island, 27 February 1971, M. M. Parker; Sandycove (O260280), 6 December 1980, JMCH; the 'Forty-Foot' (O259281), Sandycove, light-traps, 10m, 5 September 1982, 9 January 1983, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; Seapoint (O227291), 21 January 1986, D. Murphy; Dalkey Island (O279261), *Laminaria*, 20 September 1986, JMCH; Sandycove (O260280), rock-pool, 25 February 1989, JMCH; **GALWAY:** Spiddal, west of pier (M1221), light-trap, 5m, sand, 17 June 1991, JMCH; **KERRY:** Dingle (Q4-0-), shore, 22 July 1978, JMCH; Ballynagall (Q3706), Smerwick Harbour, 24 July 1978, JMCH; Knightstown (V4277), Valentia, light-trap, 3m, 21 July 1986, JMCH; West Cove (V6160), near Derrynane, light-trap, 2m, 31 May 1992, JMCH; **WATERFORD:** Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH; **WICKLOW:** Brittas Bay (T3081), 17 August 1970, JMCH.

***Eusirus longipes* Boeck, 1861**

DUBLIN: east of Kish Light, off Dublin Bay, from stomach of red gurnard, *Aspitrigla cuculus* (L.), 12 December 1982, P. Connolly (NMI); **KERRY:** Station 116, off the Skelligs, 62-52 fathoms, mud and sand, 20 August 1890, R.D.S. (NMI).

Calliopiidae

***Calliopius laeviusculus* (Krøyer, 1838)**

CORK: Donore Strand (W3841), near Clonakilty, 3 September 1970, JMCH; Red Strand (W358321), Dirk Bay, fucoids in rock-pools, 2 August 1981, JMCH (NMI); Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; **DOWN:** Portaferry, end of the ferry pier (J592507), light-trap, 1.5m, 12 March 1987, F. Jeal; Portaferry (J5950), light-trap, 10 October 1987, F. Jeal; **DUBLIN:** Killiney Beach (O2624), littoral gravel at low tide near freshwater outflow, 10 June 1979, JMCH (NMI); near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH; **GALWAY:** Spiddal, west of pier (M1221), light-trap, 5m, sand, 17 June 1991, JMCH; **MAYO:** Carramore Strand (L795817), near Louisburgh, 26 August

1987, JMCH; **WATERFORD:** Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH.

Gammarellidae

***Gammarellus angulosus* (Rathke, 1843)**

CORK: Berehaven, "Lord Bandon", August 1885, R.I.A. (NMI); Red Strand (W358321), Dirk Bay, fucoids in rock-pools, 2 August 1981, JMCH; Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; **DOWN:** north-west Irish Sea, 1982, Fisheries; Portaferry, end of the ferry pier (J592507), light-trap, 1.5m, 12 March 1987, F. Jeal; **DUBLIN**: Lambay Island (O3-5-), A. R. Nichols (NMI); Portrane (O2549), 24 October 1981, JMCH (NMI); the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH; near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; Dalkey Island (O279261), *Laminaria*, 20 September 1986, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH; **WATERFORD:** Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH.

***Gammarellus homari* (J. C. Fabricius, 1779)**

WEXFORD: off Carnsore Point, 7 January 1983, R. Grainger (NMI).

Oedicerotidae

***Halicreion aequicornis* (Norman, 1869)**

GALWAY: Kilkieran Bay (L8-3-), Pseudocucumis-ground, 3 March 1978, 26 October 1978, 9 January 1979, D. McGrath (NMI); Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl beds, September 1980, D. McGrath (NMI).

***Monoculodes carinatus* (Bate, 1856)**

CORK: Station 122, off Bull Rock, Dursey Head, 55 fathoms, 21 March 1891, R.D.S. (Holt, 1892) (NMI); Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; **DUBLIN:** Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH.

***Perioculodes longimanus* (Bate and Westwood, 1868)**

CORK: Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH; Castlehaven

(W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH (NMI); **DONEGAL:** Station 32J, North Water (C185395), Mulroy Bay, July 1980, M. M. Parker (NMI); **DOWN:** Portaferry, end of the ferry pier (J592507), light-trap, 1.5m, 12 March 1987, F. Jeal; Portaferry (J5950), light-trap, 10 October 1987, F. Jeal; **DUBLIN:** off Malahide (O3246), (Decca 3B I11H38) and (O2945), (Decca 3B I15H38), hard fine sand, 4 May 1978, M. M. Parker (NMI); south Dublin Bay (O2827), 12.5m, sand, 20 January 1982, 16 February 1982, 25 March 1982, 31 March 1982, J. G. Wilson (NMI); the 'Forty-Foot' (O259281), Sandycove, light-traps, 10m, 5 September 1982, 9 January 1983, JMCH; near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH; Broadmeadow (O224468), light-trap, 2m, mud, 23 September 1984, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH; **GALWAY:** North Beach Bay (L522657), Inishbofin, light-trap, 4m, 8 August 1993, JMCH; **KERRY:** Knightstown (V4277), Valentia, light-trap, 3m, 21 July 1986, JMCH; West Cove (V6160), near Derrynane, light-trap, 2m, 31 May 1992, JMCH; **WATERFORD:** Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH.

***Pontocrates altamarinus* (Bate and Westwood, 1862)**

CORK: Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; **DOWN:** north-west Irish Sea, 1982, Fisheries (NMI); **DUBLIN:** the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH (NMI); near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH (NMI); **WATERFORD:** Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH.

***Pontocrates arenarius* (Bate, 1858)**

CORK: Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH; Red Strand (W358327),

Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DUBLIN:** Malahide (O2945), (Decca 3B I15H38), hard fine sand, 4 May 1978, M. M. Parker (NMI); south Dublin Bay (O2827), 12.5m, sand, 20 January 1982, 16 February 1982, 25 March 1982, 31 March 1982, 6 May 1982, J. G. Wilson (NMI); near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH (NMI); Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; Portmarnock strand (O2443), mid-shore sand, 10 September 1988, JMCH; Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; **GALWAY:** Spiddal, west of pier (M1221), light-trap, 5m, sand, 17 June 1991, JMCH; **WICKLOW:** Greystones (O294129), light-trap, 3m, 26 September 1982, JMCH.

***Synchelidium maculatum* Stebbing, 1906**

CORK: Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; **DUBLIN:** seven miles east of Malahide, 8 fathoms, 2 October 1978, C. McManus (NMI); south Dublin Bay (O2827), 12.5m, sand, 20 January 1982, 16 February 1982, 25 March 1982, 6 May 1982, 15 June 1982, J. G. Wilson (NMI); the 'Forty-Foot' (O259281), Sandycove, light-traps, 10m, 5 September 1982, 9 January 1983, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH; **KERRY:** West Cove (V6160), near Derrynane, light-trap, 2m, 31 May 1992, JMCH.

***Westwoodilla caecula* (Bate, 1856)**

CORK: Station 122, off Bull Rock, Dursey Head, 21 March 1891, R.D.S. (NMI); off Cork Harbour (W8649), (Decca 7D I2E68), medium sand and gravel, 27 April 1978, M. M. Parker (NMI); off Cork Harbour (W8744), (Decca 7D I6E68), mud and shell gravel, 27 April 1978, M.

M. Parker (NMI).

Pleustidae

***Parapleustes assimilis* (G. O. Sars, 1882)**

DOWN: Strangford Lough, March 1971, JMCH (NMI).

***Parapleustes bicuspis* (Krøyer, 1838)**

ANTRIM/DOWN: Belfast Bay, dredge, 20 fathoms, 27 September 1847, G. C. Hyndman and W. Thompson (OUM).

***Stenopleustes latipes* (M. Sars, 1858)**

CORK: Log 56, 29½ miles west by south of Dursey Head, 93 fathoms, mud, "Lord Bandon", 15 July 1886, R.I.A. (NMI); Log 72, 11 miles south of Glandore Harbour, 54 fathoms, muddy sand and small shells, "Flying Falcon" June 1888, R.I.A. (NMI); **KERRY:** Log 53, 5-8 miles west of Great Skellig, 70-80 fathoms, fine muddy sand, "Lord Bandon", 13 July 1886, R.I.A. (NMI).

Amphilochidae

***Amphilochus manudens* Bate, 1862**

CORK: Narrows (W017259), Kinish Harbour, Sherkin Island, 30 June 1980 (NMI); **DONEGAL:** Moross Channel, Mulroy Bay, 1.5-4m, 11 July 1985, D. Minchin (NMI); **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 31 March 1982, J. G. Wilson (NMI); **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath (NMI).

***Amphilochus neapolitanus* Della Valle, 1893**

CORK: Roaringwater Bay (W0130), 51°31′N. 09°25.12′W., 3 July 1980 (NMI); **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 31 March 1982, 15 June 1982, J. G. Wilson (NMI).

***Gitana sarsi* Boeck, 1871**

CORK: Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH; Roaringwater Bay (W0130), 51°31′N. 09°25.12′W., 3 July 1980 (NMI); Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; **DOWN:** Portaferry, end of the ferry pier (J592507), light-trap, 1.5m, 12 March 1987, F. Jeal; Sherkin Island (W006259), light-trap, weed

and sand, 10m, 3 August 1987, JMCH; **DUBLIN:** the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH; Dalkey Island (O279261), *Laminaria*, 20 September 1986, JMCH; Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Dalkey Sound (O2726), 8 November 1992, I. Lawler; **GALWAY:** Salt Lake (L6649), Clifden, *Serpula* reef, July 1980, B. O'Connor; Salt Lake (L6649), Clifden, *Serpula* reef, July 1982, D. Minchin; Kilkieran Bay (L8-3-), Pseudocucumis-ground, 23 November 1977, 3 March 1978, D. McGrath; Kilkieran Bay (L8-3-), maerl, 20 August 1981, D. McGrath; **MAYO:** Inner Clew Bay, 4 August 1982, D. Minchin; **WATERFORD:** Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH.

***Paramphilochoides odontonyx* (Boeck, 1871)**

CORK: Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH (NMI).

Cyproideidae

***Peltocoxa brevirostris* (T. Scott and A. Scott, 1893)**

GALWAY: Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath (NMI).

Leucothoidae

***Leucothoe spinicarpa* (Abildgaard, 1789)**

CORK: Narrows (W017259), Kinish Harbour, Sherkin Island, 30 June 1980 (NMI); **DUBLIN:** Malahide Inlet, 17 June 1908, Dublin Bay Marine Biological Committee (NMI); the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH; Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; **KERRY:** seven miles south of Dingle Harbour, February 1978, Michael Long (NMI); between Knightstown Pier and Reenard Point and bottom of channel, Valentia, 9-14m, 25 May 1979, D. Minchin; **GALWAY:** Roskeeda (L9034), ascidian *Tridemnum* sp., July 1972, M. White (NMI); Pol an Choirre (L7630), Mweenish Island, Kilkieran Bay, ascidians *Ciona intestinalis* (L.) and *Ascidia mentula* Müller, 14 December 1982, M. White; **MAYO:** Westport Bay, 8 June 1980, D. Minchin.

Colomastigidae

***Colomastix pusilla* Grube, 1861**

CORK: Narrows (W017259), Kinish Harbour, Sherkin Island, 30 June 1980 (NMI); **DUBLIN:** Malahide Inlet, 17 June 1908, Dublin Bay Marine Biological Committee (NMI); **GALWAY:** Corranroo Bay (M325115), rapids, 20 April 1987, JMCH (NMI).

Stenothoidae

***Metopa borealis* G. O. Sars, 1882**

DOWN: north-west Irish Sea, 1982, Fisheries (NMI); **DUBLIN:** Dublin Bay, 1983, C. Shelley (NMI).

***Metopa bruzelii* (Goës, 1866)**

DUBLIN: south Dublin Bay (O2827), 12.5m, sand, 31 March 1982, 15 June 1982, J. G. Wilson (NMI).

***Metopa pusilla* G. O. Sars, 1892**

CORK: Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH (NMI).

***Parametopa kervillei* Chevreux, 1901**

CORK: 1 specimen, Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH (NMI); 1 specimen, Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH (NMI).

***Stenothoe elachistoides* Myers and McGrath, 1980**

GALWAY: Kilkieran Bay (L8-3-), Pseudocucumis-ground, 26 October 1978, 9 January 1979, 16 March 1979, D. McGrath; Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl dunes, 19 May 1980, September 1980, D. McGrath (NMI).

***Stenothoe marina* (Bate, 1856)**

CORK: Log 44, 38 miles west ½ south of of Dursey Head, fine sand, "Lord Bandon", 9 July 1886, R.I.A. (NMI); Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH (NMI); **DOWN:** Portaferry (J5950), light-trap, 10 October 1987, F. Jeal; **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 31 March 1982, J. G. Wilson; the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15

September 1985, JMCH; Tayleur Bay (O3251), Lambay Island, 19 June 1991, M. J. Costello and I. Lawler; Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH.

***Stenothoe monoculoides* (Montagu, 1815)**

CLARE: Muckinish (M254104), 26 August 1991, JMCH; **CORK:** Red Strand (W358321), Dirk Bay, fucoids in rock-pools, 2 August 1981, JMCH; Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Sherkin Island Marine Station jetty (W0025), *Gigartina*, lower shore, 14 October 1978, P. Leahy (NMI); Gascanane (V9923), 6 July 1978, P. Leahy; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DONEGAL:** Port-na-Blagh (C0437), rock pools, 7 June 1980, 13 June 1980, JMCH; **DOWN:** the Dorn (J5959), Strangford Lough, March 1983, F. Jeal; Portaferry (J5950), light-trap, 10 October 1987, F. Jeal; **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 31 March 1982, J. G. Wilson; the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; Dalkey Island (O279261), *Laminaria*, 20 September 1986, JMCH; Sandycove (O260280), rock-pool, 25 February 1989, 24 June 1989, JMCH; Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH; **GALWAY:** Salt Lake (L6649), Clifden, *Serpula* reef, July 1980, B. O'Connor; Kilkieran Bay (L8-3-), Pseudocucumis-ground, 3 March 1978, D. McGrath; **KERRY:** Ballynagall (Q3706), Smerwick Harbour, 24 July 1978, JMCH; Brandon Bay, 21 July 1978, JMCH; **MAYO:** Rosstoughy, Inner Clew Bay, 17 February 1988, D. Minchin; **WATERFORD:** Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH.

***Stenula rubrovittata* (G. O. Sars, 1882)**

ANTRIM/DOWN: Belfast Bay, dredge, 20 fathoms, 17 September 1847, G. C. Hyndman (OUM); **WEXFORD:** Station 32.1381, eight miles south-east of Hook Head, 52°00′N. 06°47′W., 29 October 1981, R. Grainger (NMI).

Cressidae

***Cressa dubia* (Bate, 1857)**

DERRY: Station 242, off Port Stewart, 2 June 1891, R.D.S. (NMI); **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, 23 November 1977, D. McGrath; Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath (NMI); **WEXFORD:** Conningbeg Light, 35-50m, April 1994, D. Minchin (NMI).

IRELAND: west coast of Ireland, July 1840, W. Thompson (OUM).

Hyalidae

***Hyale nilssoni* (Rathke, 1843)**

CORK: Melmane (W5141), Wood Point (W5242), Quarry Point (W5240), and Argideen, Courtmacsherry, February 1980, J. Dorman; Red Strand (W3532), Dirk Bay, rock-pools, 11 September 1970, 27 July 1981, 7 August 1981, JMCH; Sherkin Island Marine Station jetty (W0025), *Gigartina*, lower shore, 14 October 1978, P. Leahy; Sherkin Island Marine Station jetty (W0025), *Ceramium*, Mytilus zone, mid-shore, 14 October 1978, P. Leahy (NMI); Narrows (W017259), Kinish Harbour, Sherkin Island, 1 July 1980, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DONEGAL:** Port-na-Blagh (C0437), rocky shore, 7 June 1980, 13 June 1980, JMCH; **DOWN:** Strangford Lough, March 1971, JMCH; **DUBLIN:** North Bull Island, 27 February 1971, M. M. Parker; near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH (NMI); **GALWAY:** Corranroo Bay (M3211), 16 March 1987, JMCH; **KERRY:** Knightstown (V4277), Valentia, light-trap, 3m, 21 July 1986, JMCH; **WICKLOW:** Brittas Bay (T3081), 17 August 1970, 9 September 1979, JMCH.

***Hyale perieri* (Lucas, 1846)**

CORK: Sherkin Island Marine Station jetty (W0025), *Ceramium*, Mytilus zone, mid-shore, 14 October 1978, P. Leahy (NMI).

***Hyale pontica* Rathke, 1837**

CORK: Wood Point (W5242), Courtmacsherry Bay, 2 February 1980, J. Dorman (NMI); Red Strand (W358321), Dirk Bay, fucoids in rock-pools, 2 August 1981, JMCH (NMI); Red Strand

(W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH.

***Hyale stebbingi* Chevreux, 1888**

CORK: Berehaven, "Lord Bandon", August 1885, R.I.A. (NMI) (in Norman (1886) as Hyale nilssonii); Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; **DUBLIN:** Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; **KERRY:** Ballynagall (Q3706), Smerwick Harbour, 24 July 1978, JMCH (NMI).

Talitridae

Records of the talitrids or sand-hoppers may appear to be sparse, but most of the data compiled by JMCH was published in Hudson and Reynolds (1985).

***Arcitalitrus dorrieni* (Hunt, 1925)**

GALWAY: Lough Kylemore (L759584), leaf-litter, 18 February 1998, JMCH (NMI).

***Orchestia gammarellus* (Pallas, 1766)**

CLARE: Lough Murree (M2511), 6 April 1985, J. P. O'Connor; **CORK:** Currabinny, stony beach, 29 March 1991, S. Jacob; **DOWN:** east coast of Ards Peninsula, near Portaferry, exposed shore, 12 March 1971, JMCH.

***Talitrus saltator* (Montagu, 1808)**

DOWN: Newcastle, 3 August 1851, W. Thompson (OUM); **WEXFORD:** Kilmore Quay (S9603), with mites *Uropoda orchestiidarium* (Barrois), 5 August 1982, JMCH.

Iphimediidae

***Iphimedia eblanae* Bate, 1857**

DONEGAL: 1 specimen, south-west of West Town (B830446), 55°14.92′N. 08°16.03′W., from bryozoan *Omalosecosa ramulosa* (L.), 27 July 1995, B. E. Picton (BioMar survey) (NMI); **WEXFORD:** 1 specimen, east of Waterford Harbour (X71609475), 52°06.01′N. 06°57.30′W. from hydroid *Aglaophenia kirchenpaueri* (L.), 5 September 1996, B. E. Picton (BioMar survey) (NMI).

***Iphimedia minuta* G. O. Sars, 1882**

ANTRIM/DOWN: Belfast Bay, dredge, 20 fathoms, 17 September 1847, G. C. Hyndman (OUM); **DONEGAL:** Mulroy Bay, 1980, D. Minchin (NMI); **GALWAY:** Kilkieran Bay (L8-

3-), Pseudocucumis-ground, 3 March 1978, D. McGrath (NMI); Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath (NMI).

***Iphimedia nexa* Myers and McGrath, 1987**

CORK: Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; **DOWN:** Portaferry, end of the ferry pier (J592507), light-trap, 1.5m, 12 March 1987, F. Jeal; **DUBLIN:** the 'Forty-Foot' (O259281), Sandycove, light-traps, 10m, 5 September 1982, 9 January 1983, JMCH (NMI); Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH.

***Iphimedia obesa* Rathke, 1843**

DUBLIN: 1 specimen, south Dublin Bay (O2827), 12.5m, sand, 31 March 1982, J. G. Wilson (NMI); **WICKLOW:** Arklow, 24 November 1977, J. G. Wilson (NMI).

Synopiidae

***Austrosyrrhoe fimbriatus* (Stebbing and Robertson, 1891)**

GALWAY: Kilkieran Bay (L8-3-), Pseudocucumis-ground, 20 May 1979, D. McGrath (NMI); Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl dunes, 19 May 1980, September 1980, D. McGrath (NMI); Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath.

***Syrrhoe affinis* Chevreux, 1908**

DUBLIN: 1 specimen, Malahide, 9 September 1885 (NMI).

This record should be treated with extreme caution. The source of the information was a tube of unnamed animals found, by JMCH, in the collections of the Natural History Museum, Dublin. The label said, quite clearly, "Malahide, 9 Sept 1885". From the context, the contents were probably collected by A. C. Haddon or one of his co-workers who were working at that locality at that time (Haddon, 1885). In the tube was an assemblage of crustaceans. There was one specimen of the harpacticoid copepod *Harpacticus uniremis* Krøyer, three small specimens of the crab *Carcinus maenas* (L.) and the following amphipods; three *Scopelocheirus hopei* (Costa), one *Tryphosella sarsi* Bonnier, one *Gammarus locusta* (L.), one *Dexamine thea* Boeck, one *Gammaropsis nitida* (Stimpson), all species which might be expected to occur commonly at

Malahide, and then there was the single battered specimen of *Syrrhoe affinis*. All the material in the tube looked about the same vintage, being in the same state of decrepitude. The problem is that *S. affinis* is normally associated with much deeper water than that to be found at Malahide. Barnard (1972), in his revision of the synopiid amphipods, cites the species from off Morocco, in 851m depth. There is no doubt about the identity of the synopiid from Malahide. Barnard (1972) provided clear diagnoses and illustrations of the various species in the family. Also, for comparative purposes, material of *S. crenulata* Goës (from Norway) and *S. affinis* (from 240 fathoms in the Bay of Biscay) was borrowed from the Natural History Museum, London, and examined alongside the above specimen.

So, does *Syrrhoe affinis* occur at Malahide? Light-traps set near Malahide by JMCH failed to reveal any more specimens. Could the specimen be a contaminant in the tube? It is difficult to see where else the specimen could have come from. The amphipod collections of NMI contain no other deep-water material.

Argissidae

***Argissa hamatipes* (Norman, 1869)**

CORK: Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH (NMI); Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH (NMI); Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; **DUBLIN:** the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH (NMI); Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH.

Liljeborgiidae

***Liljeborgia kinahani* (Bate, 1862)**

DUBLIN: south Dublin Bay (O2827), 12.5m, sand, 31 March 1982, J. G. Wilson (NMI); **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, 3 March 1978, 26 October 1978, 16 March 1979, 20 May 1979, D. McGrath; Kilkieran Bay (L8-3-), Pseudocucumis-ground,

maerl dunes, 19 May 1980, September 1980, D. McGrath (NMI); Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath.

***Listriella mollis* Myers and McGrath, 1983**

GALWAY: Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl beds, September 1980, D. McGrath (NMI).

Dexaminidae

***Atylus falcatus* Metzger, 1871**

CORK: Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH; Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DUBLIN:** Malahide (O3246), (Decca 3B I11H38), hard fine sand, 4 May 1978, M. M. Parker (NMI); off Malahide (O2945), (Decca 3B I15H38), hard fine sand, 4 May 1978, M. M. Parker (NMI); south Dublin Bay (O2827), 12.5m, sand, 25 March 1982, 6 May 1982, J. G. Wilson (NMI); near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH (NMI); Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH; **KERRY:** West Cove (V6160), near Derrynane, light-trap, 2m, 31 May 1992, JMCH.

***Atylus guttatus* (Costa, 1851)**

CORK: Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH (NMI); Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **GALWAY:** Spiddal, west of pier (M1221), light-trap, 5m, sand, 17 June 1991, JMCH; **KERRY:** West Cove (V6160), near Derrynane, light-trap, 2m, 31 May 1992, JMCH; **WATERFORD:** Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH.

***Atylus swammerdamei* (H. Milne Edwards, 1830)**

CORK: Log 35, West Channel (W2-3-), Glandore Harbour, tow-net, "Lord Bandon", 7 July 1886, R.I.A. (NMI); Baltimore, 1895, A. R. Nichols (NMI); Dunmanus Bay, 28 May 1891, R.D.S. (NMI); Station 32.0578, nine miles east of Old Head of Kinsale, 73m, 20 October 1978, R. Grainger; Station 46.0379, Bantry Bay, 22 February 1979, R. Grainger; Rosscarbery strand (V297352), floating weed off beach, 4 August 1981, JMCH; Red Strand (W3533), Dirk Bay, near Clonakilty, inshore floating weed, 3 August 1982, JMCH; Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DONEGAL:** Stations 238 and 240, Lough Swilly, 30 May 1891, R.D.S. (NMI); **DUBLIN:** off Seapoint, Dublin Bay, 12 July 1884 (NMI); south Dublin Bay (O2827), 12.5m, sand, 16 February 1982, 31 March 1982, J. G. Wilson; the 'Forty-Foot' (O259281), Sandycove, light-traps, 10m, 5 September 1982, 9 January 1983, JMCH; near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH; Broadmeadow (O 224468), light-trap, 2m, mud, 23 September 1984, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; **GALWAY:** Spiddal, west of pier (M1221), light-trap, 5m, sand, 17 June 1991, JMCH; **KERRY:** Castlegregory, Brandon Bay, 21 July 1978, JMCH; West Cove (V6160), near Derrynane, light-trap, 2m, 31 May 1992, JMCH; **WATERFORD:** Station 46.0578, 16 miles south-south-east of Mine Head, 78m, 21 October 1978, R. Grainger; Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH; **WEXFORD:** Station 16.0578, 3 miles south-east of Carnsore Point, 16 October 1978, R. Grainger (NMI).

An above-mentioned record from Dunmanus Bay on 28 May 1891, R.D.S. (NMI) is regarded as problematical. The specimen is clearly labelled in pencil "Dunmanus Bay 28.5.91" on a printed R.D.S. label. On that date the R.D.S. Fishing Grounds Survey vessel "Harlequin" was sampling off Co.Donegal (Holt, 1892). One interpretation is that it was from Downies Bay, Co. Donegal, on 29 May 1891. Another interpretation is that it was from Dunmanus Bay after all

but taken by some other party connected to the R.D.S. Survey. *A. swammerdamei* is a common species all around the coast of Ireland.

***Atylus vedlomensis* (Bate and Westwood, 1862)**

CORK: Station 1D, off Cork Harbour, 51°34-37′N. 08°02-13′W., dumping ground, April 1974, M. M. Parker (NMI); off Cork Harbour (W8452), (Decca 7D I2E62), gravel to coarse shell sand, 26 April 1978, M. M. Parker (NMI); off Cork Harbour (W8649), (Decca 7D I2E68), medium sand and gravel, 27 April 1978, M. M. Parker (NMI); **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 26 May 1981, 31 March 1982, 15 June 1982, J. G. Wilson (NMI); **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath (NMI).

***Dexamine spinosa* (Montagu, 1913)**

ANTRIM/DOWN: entrance to Belfast Bay, dredge, 80 fathoms, 4 July 1846, G. C. Hyndman (OUM); Belfast Bay, dredge, 20 fathoms, 27 September 1847, G. C. Hyndman (OUM); **CORK:** Log 32, Bantry Harbour, 4-6 fathoms, mud, August 1885, R.I.A. (not Ballycottin (sic) Harbour as stated in O'Riordan (1970) and Costello *et al*. (1990) (NMI); Log 35, West Channel (W2-3-), Glandore Harbour, tow-net, "Lord Bandon", 7 July 1886, R.I.A. (NMI); Bantry Bay, 1892, A. R. C. Newburgh (NMI); off Calf Islands and Baltimore, Roaringwater Bay, 1895, A. R. Nichols (NMI); Roaringwater Bay (W0130), 51°31′N. 09°25.12′W., 3 July 1980 (NMI); Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DONEGAL:** Mulroy Bay, summer 1980, D. Minchin; the Wee Sea (C1939), Mulroy Bay, July 1984, P. Somerfield; **DOWN:** Portaferry area, Strangford Lough, March 1971, JMCH; **DUBLIN:** Malahide Inlet, 24 August 1907, 17 June 1908, 27 July 1908, Dublin Bay Marine Biological Committee (NMI); south Dublin Bay (O2827), 12.5m, sand, 19 February 1981, J. G. Wilson; the 'Forty-Foot' (O259281), Sandycove, light-traps, 10m, 5 September 1982, 9 January 1983, JMCH; Broadmeadow (O224468), light-trap, 2m, mud, 23 September 1984, JMCH;

Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, 20 May 1979, D. McGrath; Spiddal, west of pier (M1221), light-trap, 5m, sand, 17 June 1991, JMCH; **KERRY:** Beginish Point (V4078), October 1975, D. Minchin; Knightstown (V4277), Valentia, light-trap, 3m, 21 July 1986, JMCH; West Cove (V6160), near Derrynane, light-trap, 2m, 31 May 1992, JMCH.

***Dexamine thea* Boeck, 1861**

CLARE: Muckinish (M254104), 26 August 1991, JMCH; **CORK:** Baltimore, surface sample, 8 July 1886, R.I.A. (NMI); Roaringwater Bay (W0130), 51°31′N. 09°25.12′W., 3 July 1980 (NMI); Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DONEGAL:** Stations 19K (C186408), 9N (C189418), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); the Wee Sea (C1939), Mulroy Bay, July 1984, P. Somerfield; **DOWN:** Ballyhenry Bay (5751), Strangford Lough, light-trap, 1m, on wreck, 20 April 1984, F. Jeal; Portaferry, end of the ferry pier (J592507), light-trap, 1.5m, 12 March 1987, F. Jeal; Portaferry (J5950), light-trap, 10 October 1987, F. Jeal; **DUBLIN:** Malahide, 9 September 1885 (NMI); Killiney Beach (O2624), littoral gravel at low tide near freshwater outflow, 10 June 1979, JMCH (NMI); south Dublin Bay (O2827), 12.5m, sand, 31 March 1982, J. G. Wilson; the 'Forty-Foot' (O259281), Sandycove, light-traps, 10m, 5 September 1982, 9 January 1983, JMCH; near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; Sandycove (O260280), rock-pool, 25 February 1989, 24 June 1989, JMCH; Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH; **GALWAY:** Salt Lake (L6649), Clifden, *Serpula* reef, July 1980, B. O'Connor; Spiddal, west of pier (M1221), light-trap, 5m, sand, 17 June 1991, JMCH; **KERRY:** Castlegregory, Brandon

Bay, 21 July 1978, JMCH; Castlegregory (Q6-1-), Tralee Bay, 21 July 1978, JMCH; West Cove (V6160), near Derrynane, light-trap, 2m, 31 May 1992, JMCH; **MAYO:** Inner Clew Bay, 17 February 1988, D. Minchin; **WATERFORD:** Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH.

***Guernea coalita* (Norman, 1868)**

CORK: Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH (NMI). A record from Log 32, Ballycotton (or Ballycottin), 1885, R.I.A. (O'Riordan, 1970) can not be sustained. There was no specimen of this species in a voucher vial in NMI, and the locality was incorrect in any case; **DONEGAL:** Moross Channel, Mulroy Bay, 1.5-4m, 11 July 1985, D. Minchin; **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, 16 March 1979, D. McGrath.

***Tritaeta gibbosa* (Bate, 1862)**

CLARE: Muckinish (M254104), 26 August 1991, JMCH; **CORK:** Narrows (W017259), Kinish Harbour, Sherkin Island, 30 June 1980 (NMI); Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DUBLIN:** the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH (NMI); near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH; **KERRY:** Kilmakilloge, Kenmare Bay, 1982, D. Minchin; **MAYO:** Inner Clew Bay, 5 June 1980, D. Minchin (NMI); **WATERFORD**: Counsellor Bay (S6900), Dunmore East, light-trap, 5m, 23 June 1983, JMCH.

Ampeliscidae

***Ampelisca brevicornis* (Costa, 1853)**

CORK: Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH; Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH (NMI); **DONEGAL:** Stations 10M (C188417), 31M (C190417), 3J (C185424), 27M (C188400), 9M (C188400), 2J (C185425), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 19 February 1981, 1 April 1981, 13 May 1981, 26 May 1981, 22 June 1981, 12 August 1981, 7 September 1981, 28 September 1981, 4 November 1981, 3 December 1981, 31 March 1982, 15 June 1982, J. G. Wilson (NMI); Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH; Dublin Bay (O2633), (Decca 3B I16H46), 14 November 1992, J. G. Wilson; **KERRY:** Log 55, mouth of Kenmare River, 23-35 fathoms, "Lord Bandon", 14 July 1886, R.I.A. (NMI); West Cove (V6160), near Derrynane, light-trap, 2m, 31 May 1992, JMCH.

***Ampelisca diadema* (Costa, 1853)**

CORK: Station 122, off Bull Rock, Dursey Head, 21 March 1891, R.D.S. (NMI); Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH (NMI); **DONEGAL:** Station 29M (C188398), North Water, Mulroy Bay, July 1981, M. M. Parker (NMI); **DUBLIN:** the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH; **KERRY:** West Cove (V6160), near Derrynane, light-trap, 2m, 31 May 1992, JMCH.

***Ampelisca macrocephala* Liljeborg, 1852**

CORK: Station 122, off Bull Rock, Dursey Head, 21 March 1891, R.D.S. (NMI).

***Ampelisca spinipes* Boeck, 1861**

CORK: off Cork Harbour (Decca 7D I2E62), 26 April 1978, M. M. Parker (NMI); Station

62.0379, 10 miles south of Seven Heads, near Courtmsherry, 22 February 1979, R. Grainger (NMI); Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH; **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 26 May 1981, 28 September 1981, 3 December 1981, 16 February 1982, J. G. Wilson (NMI); Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH (NMI); Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH (NMI); Dalkey Sound (O2726), 8 November 1992, I. Lawler; **KERRY:** seven miles south of Dingle Harbour, February 1978, Michael Long (NMI); **WEXFORD:** Station 14.0678, 20 miles south of Bannow Bay, east of Hook Head, 72m, 27 November 1978, R. Grainger (NMI); **WICKLOW:** off Arklow (Decca A63.5F34), 29 November 1988, J. G. Wilson.

***Ampelisca tenuicornis* Liljeborg, 1855**

CORK: Log 35, West Channel (W2-3-), Glandore Harbour, tow-net, "Lord Bandon", 7 July 1886, R.I.A. (NMI); Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH (NMI); **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 22 June 1981, 7 September 1981, 28 September 1981, 6 May 1982, 15 June 1982, J. G. Wilson (NMI); the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 9 January 1983, JMCH; **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, 3 March 1978, D. McGrath; **KERRY:** Log 55, mouth of Kenmare River, 23-35 fathoms, "Lord Bandon", 14 July 1886, R.I.A. (NMI).

***Ampelisca typica* (Bate, 1856)**

CORK: Log 40, Long Island Sound, 3½-5 fathoms, fine sand and seaweed, "Lord Bandon", 8 July 1886 (NMI); Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH (NMI); off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH (NMI); **DOWN:** Ballyhenry Bay (5751), Strangford Lough, light-trap, 1m, on wreck, 21 April 1984, F. Jeal (NMI); **DUBLIN:** Dublin Bay (O2531), (Decca 3B I16H47), RV "Lough Beltra", 2 April 1984, J. G. Wilson (NMI); Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, 23 November 1977, D. McGrath; **KERRY:** West Cove (V6160), near Derrynane, light-

trap, 2m, 31 May 1992, JMCH.

Melphidippidae

***Megaluropus agilis* Hoek, 1889**

CORK: Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 20 January 1982, 16 February 1982, 25 March 1982, 31 March 1982, 15 June 1982, J. G. Wilson (NMI); the 'Forty-Foot' (O259281), Sandycove, light-traps, 10m, 5 September 1982, 9 January 1983, JMCH (NMI); near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH; Broadmeadow (O224468), light-trap, 2m, mud, 23 September 1984, JMCH; Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH; **KERRY:** West Cove (V6160), near Derrynane, light-trap, 2m, 31 May 1992, JMCH; **WICKLOW:** Greystones (O294129), light-trap, 3m, 26 September 1982, JMCH.

***Melphidippella macra* (Norman, 1869)**

CORK: Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH (NMI); **KERRY:** Station 116, off the Skelligs, 62-52 fathoms, mud and sand, 20 August 1890, R.D.S. (NMI).

Melitidae

***Abludomelita obtusata* (Montagu, 1813)**

CORK: Log 32, Bantry Harbour, 4-6 fathoms, mud, August 1885, R.I.A. (not Ballycotton (or Ballycottin) Harbour as stated in O'Riordan (1970) and Costello *et al.* (1990) (NMI); off Cork Harbour (W8744), (Decca 7D I6E68), mud and shell gravel, 27 April 1978, M. M. Parker (NMI); Roaringwater Bay (W0130), 51°31′N. 09°25.12′W., 3 July 1980 (NMI); **DONEGAL:** Station 29O (190398), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); the Wee Sea (C1939), Mulroy Bay, July 1984, P. Somerfield; Mulroy Bay, anemone *Anthopleura ballii*

(Cocks), 10 August 1984, D. Minchin (NMI); **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 1981, 15 June 1982, J. G. Wilson; off Howth (O3036), (Decca 3B I13H45.5), black silty clay and stones, 4 May 1978, M. M. Parker (NMI); Balbriggan (O3068), (Decca 3B I18G39), sandy mud, 4 May 1978, M. M. Parker (NMI); off Scotsman's Bay (O265296), Dublin Bay, 14m, fine sand, RV "Lough Beltra", 11 September 1992, JMCH; off Sandycove (O2-2-), trawl, 30m, RV "Celtic Voyager", 17 July 1998, JMCH; off Howth, trawl, RV "Celtic Voyager", 17 July 1998, JMCH; off Dalkey Island (O3-2-), trawl, RV "Celtic Voyager", 17 July 1998, JMCH; **KERRY:** Inch strand (Q4402), 19 July 1978, JMCH; Ventry (Q3800), shore, 22 July 1978, JMCH; south Dublin Bay (O2-3-), trawl, 20m, RV "Celtic Voyager", 17 July 1998, JMCH; **MEATH:** Drogheda (O2774), (Decca 3B J0G33), soft dark mud, 3 May 1978, M. M. Parker (NMI).

***Allomelita pellucida* (G. O. Sars, 1882)**

CORK: Lough Beg (W778627), near Curraghbinny, *Scirpus* root wash, 28 February 1991, B. Healy (NMI); **MAYO:** Lough Furnace (L9-9-), 24 September 1970, shallow brackish water, JMCH (NMI).

***Ceradocus semiserratus* (Bate, 1862)**

GALWAY: Kilkieran Bay, Pseudocucumis-ground, 23 November 1977, 3 March 1978, 26 October 1978, 9 January 1979, 16 March 1979, D. McGrath; Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl dunes, 19 May 1980, D. McGrath; Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath.

***Cheirocratus intermedius* G. O. Sars, 1894**

CORK: Station 29.0778, 17 miles south of Old Head of Kinsale, 56 fathoms, 17 December 1978, R. Grainger (NMI).

***Cheirocratus sundevallii* (Rathke, 1843)**

CORK: off Cork Harbour (W8452), (Decca 7D I2E62), gravel to coarse shell sand, 26 April 1978, M. M. Parker (NMI); Mulroe Cove (V9240), near Durrus, Dunmanus Bay, 13 August 1979, JMCH (NMI); **DONEGAL:** Stations 31O (C190396), 28D (C179399), 19K (C186408), 27O (C190400), 9M (C188400), 11M (C188416), 32J (C185395), North Water, Mulroy Bay,

July 1980, M. M. Parker (NMI); **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, 9 January 1979, D. McGrath; **MAYO:** Inner Clew Bay, 4 June 1980, D. Minchin.

***Maera othonis* (H.Milne Edwards, 1830)**

ANTRIM/DOWN: 1 specimen, Belfast Bay, dredge, 20 fathoms, 17 September 1847, G. C. Hyndman (OUM); **DOWN**: Doctor's Bay (J594617), Kirkubbin, Strangford Lough, under stones on muddy gravel, 10 January 1981, R.Anderson (NMI); **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, 23 November 1977, D. McGrath; **KERRY:** between Knightstown Pier and Reenard Point and bottom of Channel, Valentia, 9-14m, 25 May 1979, D. Minchin (NMI).

***Melita hergensis* Reid, 1939**

DUBLIN: the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 9 January 1983, JMCH (NMI); **KERRY:** Inch strand (Q4402), sandy rock-pools, 20 July 1978, JMCH; Castlegregory (Q6-1-), Tralee Bay, 21 July 1978, JMCH.

***Melita palmata* (Montagu, 1804)**

CORK: Duneen (W3936), 6 September 1970, JMCH; Narrows (W017259), Kinish Harbour, Sherkin Island, 1 July 1980, JMCH (NMI); Rosscarbery strand (V297352), floating weed off beach, 4 August 1981, JMCH; **DUBLIN:** Sandycove (O260280), 22 October 1970, JMCH (NMI); **WATERFORD:** Dungarvan, 2 December 1978, J. G. Wilson.

Aoridae

***Aora gracilis* (Bate, 1857)**

CORK: Log 25, between Volage Rock and Hornet Rock, Berehaven, 5 fathoms, mud, sand and stones, "Lord Bandon", August 1885, R.I.A. (NMI); Log 40, Long Island Sound, 3½-5 fathoms, fine sand and seaweed, "Lord Bandon", 8 July 1886, R.I.A. (NMI); Narrows (W017259), Kinish Harbour, Sherkin Island, 30 June 1980 (NMI); Roaringwater Bay (W0130), 51°31′N. 09°25.12′W., 3 July 1980 (NMI); Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; **DONEGAL:** Mulroy Bay, scallop collector bags, October 1979, D. Minchin; Station 30J (C185397), North Water, Mulroy Bay, 1980, D. Minchin; **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 15 June 1982, J. G. Wilson; off Howth, trawl, "Celtic

Voyager", 17 July 1998, JMCH; **GALWAY:** Fahy Bay (L6658), Ballynakill, 28 July 1982, D. Minchin; **KERRY:** Ventry (Q3800), shore, 22 July 1978, JMCH; Castlegregory (Q6-1-), Tralee Bay, 21 July 1978, JMCH; **LOUTH:** Bellurgan (J1008), mud-flat, mid-upper shore, 7 January 1991, J. Ryan; **MAYO:** Inner Clew Bay, 4 August 1982, D. Minchin.

***Lembos websteri* Bate, 1857**

CORK: Log 35, West Channel (W2-3-), Glandore Harbour, tow-net, "Lord Bandon", 7 July 1886, R.I.A. (NMI); **DONEGAL:** Station 31I (C184396), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); **GALWAY:** Roundstone, 1 August 1894, J. E. Duerden (NMI); Salt Lake (L6649), Clifden, *Serpula* reef, July 1980, B. O'Connor; Salt Lake (L6649), Clifden, *Serpula* reef, July 1982, D. Minchin; Ballynakill, mauger oyster trestles, 28 July 1982, D. Minchin.

***Microdeutopus anomalus* (Rathke, 1843)**

CORK: Log 25, between Volage Rock and Hornet Rock, Berehaven, 5 fathoms, mud, sand and stones, "Lord Bandon", August 1885, R.I.A. (NMI); **DONEGAL:** Mulroy Bay, July-October 1979, D. Minchin; Stations 31O (C190396), 28D (C179399), 27E (C180400), 8L (C187419), 31I (C184396), 6K (C186421), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); the Wee Sea (C1939), Mulroy Bay, July 1984, P. Somerfield; **GALWAY:** Bofin Harbour (L5364), 18 April 1899, Fisheries (NMI); Salt Lake (L6649), Clifden, *Serpula* reef, July 1980, B. O'Connor; Salt Lake (L6649), Clifden, *Serpula* reef, July 1982, D. Minchin; Fahy Bay (L6658), Ballynakill, 28 July 1982, D. Minchin; **MAYO:** Inner Clew Bay, 17 February 1988, D. Minchin.

***Microdeutopus gryllotalpa* A.Costa, 1853**

CORK: Kinsale, net sweep, 27 February 1991, P. Galvin.

***Microdeutopus versiculatus* (Bate, 1856)**

CORK: Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **KERRY:** Ventry (Q3800), shore, 22 July 1978, JMCH; **MAYO:** Inner Clew Bay, 4 August 1982, 17 February 1988, D. Minchin.

Unciolidae

***Unciola planipes* Norman, 1867**

CORK: off Cork Harbour (W8540), (Decca 7D I10E68), 27 April 1978, M. M. Parker (NMI).

Cheluridae

***Chelura terebrans* Philippi, 1839**

DOWN: Portaferry (J5950), light-trap, 14 October 1987, F. Jeal; **DUBLIN:** Dunlaoghaire Harbour, Dublin Bay, wooden pile, 1907, A. R. Nichols (O'Riordan, 1970) (NMI).

Ampithoidae

***Amphitholina cuniculus* (Stebbing, 1874)**

CORK: 2 specimens, Faha (V828484), Bantry Bay, midrib of *Alaria esculenta* (L.), exposed rocky shore, 28 July 1985, JMCH (NMI).

***Ampithoe gammaroides* (Bate, 1856)**

CORK: Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; Faha (V828484), exposed rocky shore, 28 July 1985, JMCH; **DUBLIN:** Killiney Beach (O2624), littoral gravel at low tide near freshwater outflow, 10 June 1979, JMCH (NMI); Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH.

***Ampithoe helleri* G.Karaman, 1975**

CORK: Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DONEGAL:** the Wee Sea (C1939), Mulroy Bay, July 1984, P. Somerfield; **DOWN:** Chapel Bay, Great Copeland Island, littoral pool, 13 May 1939, R. MacDonald (NMI); **DUBLIN:** the 'Forty-Foot' (O 259281), Sandycove, light-trap, 10m, 9 January 1983, JMCH; Sandycove (O260280), rock-pool, 24 June 1989, JMCH; **GALWAY:** Spiddal, west of pier (M1221), light-trap, 5m, sand, 17 June 1991, JMCH; **KERRY:** Knightstown (V4277), Valentia, light-trap, 3m, 21 July 1986, JMCH; **WATERFORD:** Dungarvan, 1896, A. R. Nichols (NMI).

***Ampithoe rubricata* (Montagu, 1808)**

CORK: Bantry Bay, 1892, A. R. C. Newburgh (O'Riordan, 1970) (NMI); Sherkin Island, Baltimore and off Calf Islands, 1895, A. R. Nichols (O'Riordan, 1970) (NMI); Colla harbour

(V917292), near Schull, 4 September 1970, JMCH; **DONEGAL:** pier at Moross Point (C1939), Mulroy Bay, under rock, lower shore, 5 July 1980, D. Minchin; **DOWN:** Strangford Lough, October 1839, G. C. Hyndman and W. Thompson (OUM); 4 specimens, Bloody Bridge, Newcastle, between tide marks, September 1837, W. Thompson (OUM); Portaferry (J5950), light-trap, 10 October 1987, F. Jeal; **DUBLIN:** Lambay Island, 1906, A. R. Nichols (O'Riordan, 1970); off nose of Howth, *circa* 72 fathoms, 7 September 1907, N. Colgan (NMI); Malahide Inlet, 24 August 1907, 17 June 1908, 27 July 1908, Dublin Bay Marine Biological Committee (NMI); Killiney Beach (O2624), littoral gravel at low tide near freshwater outflow, 10 June 1979, JMCH; Broadmeadow (O224468), light-trap, 2m, mud, 23 September 1984, JMCH; **GALWAY:** Bofin Harbour (L5364), 18 April 1899, Fisheries (NMI); Roundstone, Connemara coast, 1 August 1894, J. E. Duerden (NMI) (O'Riordan, 1970); **KERRY:** Valentia, 23 May 1979, D. Minchin; Inch strand (Q4402), sandy rock pools, 20 July 1978, JMCH; Ventry (Q3800), shore, 22 July 1978, JMCH; Ballynagall (Q3706), Smerwick Harbour, 24 July 1978, JMCH; Brandon Bay, 21 July 1978, JMCH; Castlegregory (Q6-1-), Tralee Bay, 21 July 1978, JMCH; **WATERFORD:** Dungarvan, 1896, A. R. Nichols (O'Riordan, 1970) (NMI); **WICKLOW:** Bray, 1896, A. R. Nichols (O'Riordan, 1970) (NMI).

***Sunamphitoe pelagica* (H.Milne Edwards, 1830)**

CORK: Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH; Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **GALWAY:** Bofin Harbour (L5364), 18 April 1899, Fisheries (NMI).

Corophiidae

***Apocorophium acutum* (Chevreux, 1908)**

CORK: Narrows (W017259), Kinish Harbour, Sherkin Island, 30 June 1980 (NMI); Roaringwater Bay (W0130), 51°31′N. 09°25.12′W., 3 July 1980 (NMI); Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; **DUBLIN:** the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH (NMI); Dalkey Sound (O272265), light-trap, 5m, 15 September 1985, JMCH; **KERRY:** Knightstown (V4277),

Valentia, light-trap, 3m, 21 July 1986, JMCH.

***Corophium volutator* (Pallas, 1766)**

DONEGAL: estuary near Ballyshannon, 1895, H. Allingham (NMI) - not Ballycotton, Co. Cork as listed in Costello *et al.* (1990); **DOWN:** 1 specimen, Dundrum Bay, October 1851, W. Thompson (OUM); Portaferry area, Strangford Lough, March 1971, JMCH; Portaferry (J5950), light-trap, 14 October 1987, F. Jeal; **DUBLIN:** Sandymount (O1932), 16 April 1978, JMCH; Malahide Estuary (O2347), 5 November 1987, JMCH; **WEXFORD:** Rosslare (T091179), 13 May 1981, J. P. O'Connor; Ballyteige (S935065), estuarine mud, 5 June 1988, JMCH (NMI); Ballyteige (S935065), light-trap, 1m, 6 June 1988, JMCH; **WICKLOW:** Newcastle (O3103), 4 March 1979, JMCH.

***Crassicorophium bonnellii* (H.Milne Edwards, 1830)**

CORK: Log 25, between Volage Rock and Hornet Rock, Berehaven, 5 fathoms, mud, sand and stones, "Lord Bandon", August 1885, R.I.A. (NMI); Log 35, West Channel (W2-3-), Glandore Harbour, tow-net, "Lord Bandon", 7 July 1886, R.I.A. (NMI); Narrows (W017259), Kinish Harbour, Sherkin Island, 30 June 1980 (NMI); Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH; **DONEGAL:** Stations 29M (C188398), 31O (C190396), 31M (C190417), 3K (C186424), 27G (C182400), 2K (C186425), 11M (C188416), 8N (C189419), 8L (C187419), 6K (C186421), 32J (C185395), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); **DUBLIN:** off Howth (O3136), (Decca 3B I12H45), very coarse sand and pebbles, 4 May 1978, M. M. Parker (NMI); off Howth (O3036), (Decca 3B I13H45.5), black silty clay and stones, 4 May 1978, M. M. Parker (NMI); south Dublin Bay (O2827), 12.5m, sand, 7 September 1981, 3 December 1981, J. G. Wilson; Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; **GALWAY:** Bofin Harbour (L5364), 18 April 1899, Fisheries (NMI); Salt Lake (L6649), Clifden, *Serpula* reef, July 1980, B. O'Connor; Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath; Salt Lake (L6649), Clifden, *Serpula* reef, July 1982, D. Minchin; Killary Harbour, near ferry pier on south side (L8362), *circa* 4m, *Serpula* reef, May 1984, D. Minchin; Corranroo Bay (M322116),

lower shore, 20 April 1987, JMCH; **KERRY:** Log 20, about 12 miles south-west of Great Skellig, 70 fathoms, muddy sand, August 1885, R.I.A. (O'Riordan, 1970) (NMI); Tralee Bay, October 1981, D. Minchin; **MAYO:** Inner Clew Bay, 5 June 1980, 4 August 1982, D. Minchin.

***Crassicorophium crassicorne* (Bruzelius, 1859)**

CORK: Log 32, Bantry Harbour, 4-6 fathoms, mud, August 1885, R.I.A. (not Log 32, Ballycotton (or Ballycottin) Harbour, R.I.A. (O'Riordan, 1970; Costello *et al*., 1990)) (NMI); Log 35, West Channel (W2-3-), Glandore Harbour, tow-net, "Lord Bandon", 7 July 1886, R.I.A. (O'Riordan, 1970) (NMI); **DUBLIN:** off Howth (O3036), (Decca 3B I13H45.5), black silty clay and stones, 4 May 1978, M. M. Parker (NMI); Dublin Bay (O2633), (Decca 3B I16H46), 2 April 1984, J. G. Wilson (NMI); **LOUTH:** Carlingford, (Decca 3B J16E40), coarse sand and stone, 3 May 1978, M. M. Parker (NMI).

***Leptocheirus hirsutimanus* (Bate, 1862)**

GALWAY: Kilkieran Bay (L8-3-), Pseudocucumis-ground, 23 November 1977, 9 January 1979, 16 March 1979, D. McGrath (NMI).

***Leptocheirus pectinatus* (Norman, 1869)**

CORK: Log 32, Bantry Harbour, 4-6 fathoms, mud, August 1885, R.I.A. (NMI); **MAYO:** Inner Clew Bay, 4 August 1982, 17 February 1988, D. Minchin.

The original label on the NMI material clearly stated "R.I.A. Exp. 1885 Log 32", so it must be from Log 32, Bantry Harbour, August 1885 (Haddon, 1886) and not the unfortunately titled Log 32, Ballycotton Harbour, 6 July 1886 (Haddon and Green, 1886). The single specimen was listed from "Ballycottin Harbour", under *Leptocheirus hirsutimanus* (Bate) = *L. pilosus* Zaddach in O'Riordan (1970). It was re-identified by JMCH as *L. pectinatus*, but listed as "Ballycotton (NMI)" in Costello *et al*. (1990).

***Leptocheirus pilosus* Zaddach, 1844**

WEXFORD: North Slob, main channel, 25 October 1991, P. Galvin (NMI).

***Leptocheirus tricristatus* (Chevreux, 1887)**

GALWAY: Kilkieran Bay (L8-3-), Pseudocucumis-ground, 3 March 1978, 26 October 1978, 9 January 1979, 20 May 1979, D. McGrath; Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl

dunes, 19 May 1980, September 1980, D. McGrath; Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath; **KERRY:** Kilmakilloge, Kenmare Bay, 1982, D. Minchin (NMI).

***Monocorophium sextonae* (Crawford, 1937)**

CORK: off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DOWN:** Ringhaddy Sound (J5359), Strangford Lough, 20m, wreck of the "Alisdaire", 27 September 1991, I. Lawler; **WEXFORD:** Conningbeg Light, 35-50m, April 1994, D. Minchin.

Microprotopidae

***Microprotopus maculatus* Norman, 1867**

CORK: Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DUBLIN:** off Bailey, Howth, 7 September 1907, Dublin Bay Marine Biological Committee (NMI); south Dublin Bay (O2827), 12.5m, sand, 16 February 1982, J. G. Wilson; Broadmeadow (O224468), light-trap, 2m, mud, 23 September 1984, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; **KERRY:** Knightstown (V4277), Valentia, light-trap, 3m, 21 July 1986, JMCH; **MAYO:** Station S.R.151, 50 miles west-north-west of Eagle Island, 388 fathoms, 27 August 1904, Fisheries (NMI).

Photidae

***Gammaropsis maculata* (Johnston, 1828)**

ANTRIM/DOWN: 7 specimens, Belfast Bay, dredge, 20 fathoms, 17 September 1847, G. C. Hyndman and W. Thompson (OUM); **CORK:** Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; **DERRY:** Station 242, off Portstewart, 2 June 1891, R.D.S. (NMI); **DOWN:** off Cultra, Belfast Bay, dredge, 6-10 fathoms, August 1844, G. C. Hyndman (OUM); **GALWAY:** Bofin Harbour (L5364), 18 April 1899, Fisheries (NMI); Kilkieran Bay (L8-3-), Pseudocucumis-ground, 3 March 1978, D. McGrath (NMI); **KERRY:** Log 53, 5-8 miles west of Great Skellig, fine muddy sand, 70-80 fathoms, 13 July 1886, R.I.A. (O'Riordan, 1970) (NMI); between Knightstown Pier and Reenard Point and bottom of channel, Valentia, 9-

14m, 25 May 1979, D. Minchin; Beginish Point (V4078), October 1975, D. Minchin; **WEXFORD:** Conningbeg Light, 35-50m, April 1994, D. Minchin.

***Gammaropsis nitida* (Stimpson, 1853)**

ANTRIM/DOWN: 1 specimen, Belfast Bay, dredge, 20 fathoms, 17 September 1847, G. C. Hyndman (OUM); **CORK:** Station S.R.187, 10 miles south-west of Fastnet, 51°14′30″N. 09°43′W., trawl, 31 January 1905, Fisheries (NMI); **DUBLIN:** Malahide, 9 September 1885 (NMI); off Bailey, Howth, 7 September 1907, Dublin Bay Marine Biological Committee (NMI).

***Gammaropsis palmata* (Stebbing and Robertson, 1891)**

CORK: off Cork Harbour (W8540), (Decca 7D I10E68), coarse sand and mud, 27 April 1978, M. M. Parker (NMI); **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 15 June 1982, J. G. Wilson (NMI); **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, 3 March 1978, D. McGrath (NMI).

***Gammaropsis sophiae* (Boeck, 1861)**

CORK: Log 56, 29½ miles west by south of Dursey Head, 93 fathoms, mud, 15 July 1886, R.I.A. (O'Riordan, 1970) (NMI).

***Megamphopus cornutus* Norman, 1869**

CORK: off Cork Harbour (W9046), (Decca 7D I2E74), mud and coarse sand and gravel, 27 April 1978, M. M. Parker (NMI); **GALWAY:** Kilkieran Bay (L8-3-), Pseudocucumis-ground, 3 March 1978, 26 October 1978, 9 January 1979, 16 March 1979, D. McGrath; Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl beds, September 1980, D. McGrath; Kilkieran Bay (L8-3-), Pseudocucumis-ground, maerl, dredge, 6-7 December 1981, D. McGrath.

***Photis longicaudata* (Bate and Westwood, 1862)**

CORK: Log 33, 28 miles off Ballycotton, 51°22½′N. 07°58′W., 52½ fathoms, gravel and broken shells, 6 July 1886, R.I.A. (NMI); off Cork Harbour (W7833), (Decca 7D I18E62), muddy coarse sand, 27 April 1978, M. M. Parker (NMI); **DUBLIN:** off Howth (O3136), (Decca 3B I12H45), very coarse sand and pebbles, 4 May 1978, M. M. Parker (NMI); south Dublin Bay (O2827), 12.5m, sand, 12 August 1981, 7 September 1981, 28 September 1981, 3 December

1981, 16 February 1982, 31 March 1982, 15 June 1982, J. G. Wilson (NMI); near Malahide (O239459), light-trap, 2m, sand, 29 April 1984, JMCH (NMI); **LOUTH:** Drogheda (O2276), (Decca 3B J6G30), muddy fine sand, 3 May 1978, M. M. Parker (NMI); Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Dublin Bay (O2633), (Decca 3B I16H46), 14 November 1992, J. G. Wilson; off Scotsman's Bay (O265296), Dublin Bay, 14m, fine sand, RV "Lough Beltra", 11 September 1992, JMCH; **WEXFORD:** Kilmore Quay, 26 April 1982, D. Minchin; **WICKLOW:** off Arklow (Decca A63.5F34), 29 November 1988, J. G. Wilson.

***Photis pollex* A.O.Walker, 1895**

ANTRIM/DOWN: 2 specimens, Belfast Bay, dredge, 20 fathoms, 17 September 1847, G. C. Hyndman and W. Thompson (OUM); **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 13 May 1981, 12 August 1981, 28 September 1981, 20 January 1982, 16 February 1982, 25 March 1982, 31 March 1982, 15 June 1982, J. G. Wilson (NMI).

Ischyroceridae

***Ericthonius punctatus* (Bate, 1857)**

CORK: Log 22, seven miles south-south-west of Dursey Head, 40 fathoms, "Lord Bandon", August 1885 (NMI); Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Narrows (W017259), Kinish Harbour, Sherkin Island, 30 June 1980 (NMI); Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH (NMI); Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DONEGAL:** Station 31M (C190417), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); Station 30J (C185397), North Water, Mulroy Bay, 1980, D. Minchin; **DUBLIN:** the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH; **GALWAY:** Salt Lake (L6649), Clifden, *Serpula* reef, July 1980, B. O'Connor (NMI); Salt Lake (L6649), Clifden, *Serpula* reef, July 1982, D. Minchin; Kilkieran Bay (L8-3-), Pseudocucumis-ground, 9 January 1979, D. McGrath; **KERRY:** Log 53, 5-8 miles west of Great Skellig, 70-80 fathoms, fine muddy sand, "Lord Bandon", 13 July 1886, R.I.A. (NMI);

between Knightstown Pier and Reenard Point and bottom of channel, Valentia, 9-14m, 25 May 1979, D. Minchin; Beginish Point (V4078), October 1975, D. Minchin; Tralee Bay, October 1981, D. Minchin.

***Ericthonius rubricornis* (Stimpson, 1853)**

CORK: Log 32, Bantry Harbour, 4-6 fathoms, mud, August 1885, R.I.A. (not Log 32, Ballycotton, July 1886, as stated in Costello *et al*., 1990) (NMI).

***Ischyrocerus minutus* Liljeborg, 1851**

CORK: Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH (NMI); Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; **DUBLIN:** the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 9 January 1983, JMCH; Dalkey Island (O279261), *Laminaria*, 20 September 1986, JMCH (NMI); Tayleur Bay (O3251), Lambay Island, light-trap, 15m, 20 June 1991, JMCH; Sunk Island (O321499), Lambay Island, light-trap, 10m, 20 June 1991, JMCH.

***Jassa falcata* (Montagu, 1808)**

CORK: Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH (NMI); **DUBLIN:** Lambay Island (O3-5-), 1906, A. R. Nichols (NMI); Malahide Inlet, 2-3 fathoms, 27 July 1908, Dublin Bay Marine Biological Committee (NMI); Dalkey Island (O279261), *Laminaria*, 20 September 1986, JMCH (NMI).

***Jassa herdmani* (Walker, 1893)**

GALWAY: Roundstone, 1 August 1894, J. E. Duerden (under *J. falcata* in Costello *et al.* (1990) (NMI).

***Microjassa cumbrensis* (Stebbing and Robertson, 1891)**

ANTRIM/DOWN: 1 specimen, Belfast Bay, 5 December 1840, E. Gatty (William Thompson collection, OUM); **DONEGAL:** Mulroy Bay, 31 August 1980, D. Minchin (NMI); **DOWN:** Ringhaddy Sound (J5359), Strangford Lough, 20m, wreck of the "Alisdaire", 27 September 1991, I. Lawler; **GALWAY:** Kilkieran Bay (L8-3-), maerl, 20 August 1981, D. McGrath (NMI).

***Parajassa pelagica* (Leach, 1814)**

DUBLIN: Dalkey Island (O279261), *Laminaria*, 20 September 1986, JMCH (NMI).

***Siphonoecetes kroyeranus* Bate, 1856**

DUBLIN: Dalkey Island, A. C. Haddon (Walker, 1898) (NMI).

Podoceridae

***Podocerus variegatus* Leach, 1814**

DUBLIN: Dalkey Island (O279261), *Laminaria*, 20 September 1986, JMCH.

Dulichiidae

***Dyopedos monacanthus* (Metzger, 1875)**

KERRY: Station 116, off the Skelligs, 62-52 fathoms, mud and sand, 20 August 1890, R.D.S. (NMI).

Caprellidae

***Caprella acanthifera* Leach, 1814**

CLARE: Muckinish (M254104), 26 August 1991, JMCH; **CORK:** Log 40, Long Island Sound, 3½-5 fathoms, fine sand and seaweed, "Lord Bandon", 8 July 1886 (NMI), (as *C. linearis* in O'Riordan (1970)); Roaringwater Bay (W0130), 51°31′N. 09°25.12′W., 3 July 1980 (NMI); **DONEGAL:** Port-na-Blagh (C0437), *Corallina*, 13 June 1980, JMCH; Stations 31O (C190396), 33O (C190394), 28Q (C192399), 33Q (C192394), 11M (C188416), 19K (C186408), 16M (C188411), 29O (C190398), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); the Wee Sea (C1939), Mulroy Bay, July 1984, P. Somerfield; **DUBLIN:** Dalkey Sound, 10 fathoms, 20 September 1906, N. Colgan (NMI); Malahide Inlet, 2-3 fathoms, 27 July 1908, Dublin Bay Marine Biological Committee (NMI); **GALWAY:** Salt Lake (L6649), Clifden, *Serpula* reef, July 1980, B. O'Connor; Salt Lake (L6649), Clifden, *Serpula* reef, July 1982, D. Minchin; Kilkieran Bay (L8-3-), Pseudocucumis-ground, 9 January 1979, 3 March 1978, D. McGrath; Ballynakill, mauger oyster trestles, 28 July 1982, D. Minchin; **KERRY:** Beginish Point (V4078), October 1975, D. Minchin; Castlegregory, Brandon Bay, 21 July 1978, JMCH; **MAYO:** Inner Clew Bay, 5 June 1980, 4 August 1982, 17 February 1988, D. Minchin.

***Caprella fretensis* Stebbing, 1878**

CORK: Sherkin Island (W006259), light-trap, weed and bedrock, 7m, 2 August 1987, JMCH; Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH (NMI); **DUBLIN:** Dalkey Island (O279261), *Laminaria*, 20 September 1986, JMCH (NMI); **KERRY:** West Cove (V6160), near Derrynane, light-trap, 2m, 31 May 1992, JMCH.

***Caprella linearis* (L., 1767)**

DUBLIN: Malahide Inlet, 17 June 1908, Dublin Bay Marine Biological Committee (NMI); Kelly's Rock (O3050), Lambay Island, light-trap, 15m, 20 June 1991, JMCH (NMI).

***Caprella penantis* Leach, 1814**

CORK: Red Strand (W358327), Dirk Bay, light-trap, *Laminaria*, 14 August 1983, JMCH.

***Caprella tuberculata* Bate and Westwood, 1868**

DUBLIN: Dalkey, A. C. Haddon (NMI); Malahide Inlet, 17 June 1908, Dublin Bay Marine Biological Committee (NMI); Portrane (O2549), 24 October 1981, JMCH (NMI).

***Pariambus typicus* (Krøyer, 1844)**

CORK: Station 122. off Bull Rock, Dursey Head, 21 March 1891, R.D.S. (NMI); Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH (NMI); **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 1 April 1981, 21 July 1981, 12 August 1981, 7 September 1981, 28 September 1981, 3 December 1981, March 1981, 20 January 1982, 16 February 1982, 26 May 1981, 25 March 1982, 31 March 1982, 6 May 1982, 15 June 1982, J. G. Wilson (NMI); off Scotsman's Bay (O265296), Dublin Bay, 14m, fine sand, RV "Lough Beltra", 11 September 1992, JMCH; Dublin Bay (O2633), (Decca 3B I16H46), 14 November 1992, J. G. Wilson; south Dublin Bay (O2-3-), trawl, 20m, RV "Celtic Voyager", 17 July 1998, JMCH; off Sandycove (O2-2-), trawl, 30m, RV "Celtic Voyager", 17 July 1998, JMCH; off Dalkey Island (O3-2-), trawl, RV "Celtic Voyager", 17 July 1998, JMCH.

***Parvipalpus capillaceus* (Chevreux, 1888)**

KERRY: between Knightstown Pier and Reenard Point and bottom of channel, Valentia, 9-14m, 25 May 1979, D. Minchin (NMI).

***Phtisica marina* Slabber, 1769**

CORK: Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Roaringwater Bay (W0130), 51°31′N. 09°25.12′W., 3 July 1980 (NMI); Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; off Kinish Harbour (W014259), Sherkin Island, light-trap, weed and muddy sand, 4m, 3 August 1987, JMCH; **DONEGAL:** Mulroy Bay, July-October 1979, D. Minchin; Stations 31O (C190396), 8N (C189419), 31M (C190417), 28Q (C192399), 9N (C189418), 33Q (C192394), 8L (C187419), 27I (C184400), 19K (C186408), 16M (C188411), North Water, Mulroy Bay, July 1980, M. M. Parker (NMI); Caffard Bay, 6m, 5 September 1980, D. Minchin; **DOWN:** 1 specimen, Strangford Lough, 5 September 1847 (OUM); Ringhaddy Sound (J5359), Strangford Lough, 20m, wreck of the "Alisdaire", 27 September 1991, I. Lawler; **DUBLIN:** south Dublin Bay (O2827), 12.5m, sand, 7 September 1981, J. G. Wilson; the 'Forty-Foot' (O259281), Sandycove, light-trap, 10m, 5 September 1982, JMCH; **GALWAY:** Salt Lake (L6649), Clifden, *Serpula* reef, July 1980, B. O'Connor; Salt Lake (L6649), Clifden, *Serpula* reef, July 1982, D. Minchin; **KERRY:** Beginish Point (V4078), October 1975, D. Minchin; Knightstown (V4277), Valentia, light-trap, 3m, 21 July 1986, JMCH; Kilmakilloge, Kenmare Bay, 1982, D. Minchin; **MAYO:** Inner Clew Bay, 4 August 1982, 17 February 1988, D. Minchin; **WEXFORD:** Conningbeg Light, 35-50m, April 1994, D. Minchin.

***Pseudoprotella phasma* (Montagu, 1804)**

CORK: Courtmacsherry, 1839, G. J. Allman (OUM); Sherkin Island (W006259), light-trap, weed and sand, 10m, 3 August 1987, JMCH; **GALWAY:** Kilkieran Bay (L8-3-), maerl, 20 August 1981, D. McGrath; **KERRY:** Kilmakilloge, Kenmare Bay, 1982, D. Minchin (NMI); Beginish Point (V4078), October 1975, D. Minchin (NMI); Tralee Bay, October 1981, D. Minchin; **MAYO:** Inner Clew Bay, 5 June 1980, D. Minchin; **WEXFORD:** just south of Carnsore Point, 53°09′N. 6°23′W., 6 June 1978, D. McGrath (NMI).

HYPERIIDEA

Hyperiidae

***Hyperia galba* (Montagu, 1813)**

CORK: 1 specimen, Youghal, R. Ball (OUM): Station13.1381, eight miles south of Old Head of Kinsale, 51°28′N. 08°31′W., 27 October 1981, R. Grainger; Courtmacsherry Bay, regurgitated from pollack *Pollachius pollachius* (L.), 27 July 1986, J. Dorman; Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH; Courtmacsherry Bay, light-trap, 40m, 13 August 1986, JMCH; **DERRY:** Station 242, off Portstewart, 2 June 1891, R.D.S. (NMI); **DOWN:** 6 specimens, off Co. Down coast, taken out of the cavities of *Medusa aurita* (now *Aurelia aurita* (L.)) and *Rhizostoma*, August 1842, G. C. Hyndman (OUM); **DUBLIN:** Bullock Harbour (O262278), Dalkey, 13 July 1971, JMCH (NMI); **KERRY:** Valentia, jellyfish *Pelagia noctiluca* (Forskål), 26 August 1979, D. Minchin; Rossbehy Strand (V649-), stranded jellyfish *Chrysaora hysoscella* (L.), 8 August 1982, JMCH; Inch Strand (Q4402), stranded jellyfish *Aurelia aurita* (L.), 19 July 1978, 22 July 1978, JMCH; Dingle (Q4-0-), stranded *Aurelia aurita*, 22 July 1978, JMCH.

***Themisto compressa* Goës, 1865**

CORK: Station 29.0279, 20 miles south of Ballycotton, 25 January 1978, R. Grainger (NMI); Station 11.1479, off Old Head of Kinsale, 15 December 1979, R. Grainger (NMI); Courtmacsherry Bay, 1983, J. Dorman ; Castlehaven (W175293), light-trap, 5m, mud near *Zostera*, 17 August 1985, JMCH (NMI); **WEXFORD:** Station 8.0478. near Coningbeg Light, 18 September 1978, R. Grainger (NMI).

***Primno evansi* Sheader, 1986**

MAYO: Station CXXI, 64 miles north-west, ½ west of Cleggan Head, 199 fathoms, "Helga", 24 August 1901, Fisheries (NMI).

Acknowledgements

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TWO SPIDERS (ARANEAE) NEW TO IRELAND FROM RAISED BOG: *HYPSOSINGA ALBOVITTATA* (WESTRING) (ARANEIDAE) AND *MINICIA MARGINELLA* (WIDER) (LINYPHIIDAE)

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Introduction

The first Irish records of an orb-weaving spider *Hypsosinga albovittata* (Westring, 1851) and a linyphiid species *Minicia marginella* (Wider, 1834) are detailed. The former was collected from two raised bogs, Lodge bog in Co. Kildare and Clara bog in Co. Offaly, while *M. marginella* was found at the latter site. Their habitat preferences and distribution in Europe are noted. Their occurrence on raised bog is discussed especially since the former species is more likely found on drier habitats. It is suggested the *Betula* woodland at both sites could be influential.

Study sites

Details regarding the present condition and history of Lodge Bog (N715262) are given in another paper in the present volume (Nolan, 2007). The vegetation of south Lodge is characterised by a range of typical bog species: *Sphagnum* spp., *Cladonia* sp., heather *Calluna vulgaris*, cross-leaved heather *Erica tetralix*, bog asphodel *Narthecium ossifragum*, common sundew *Drosera rotundifolia*, deergrass *Trichophorum caespitosus*, *Eriophorum* spp.and white beak-sedge *Rhynchosporon alba*. The eastern edge of south Lodge has birch *Betula* woodland and a considerable amount of bog myrtle *Vaccinium myrtillus*.

Clara Bog (N245304) is a statutory nature reserve and lies about 47km west of Lodge bog. On the basis of an award from The Heritage Council of a wildlife grant in 2007, the author instigated a collecting regimen at Clara bog in April of that year. Details and results of this study will be published at a later date. The study area is characterised by large wet *Sphagnum*

pools surrounded by noticeably less wet bog. Vegetation is dominated by *C. vulgaris*, *E. tetralix, N. ossifragum*, *R. alba* and *T. caespitosus*. Other plant species strongly associated with bogs were seen in some abundance in the locality: *Sphagnum spp*, *D. rotundifolia*, oblong-leaved sundew *D. anglica*, cranberry *Vaccinium oxycoccos* and bog rosemary *Andromeda polifolia*. Bogbean *Menynanthes trifoliata* is very abundant in the wetter areas. Clara is well known for the presence of substantial *Betula* woodland on some areas of the bog however sampling was not carried out close to this habitat.

Methods

Specimens of *H. albovittata* were collected with a sweep-net at Lodge bog. The specimens of *H. albovittata* and *M. marginella* were collected at Clara Bogwith a sweep-net between April and July. On each occasion at Clara Bog 180 individual strokes (three transects of 20 'sweeps', three strokes to one 'sweep') were made. Spiders were identified using Snazell (1991), Roberts (1993), Nentwig *et al.* (2003) and Almquist (2005). Nomenclature follows Merrett and Murphy (2000).

***Hypsosinga albovittata* (Westring, 1851)**

One mature male and one immature were swept at Lodge Bog on 4 May 2005. The specimens were collected on south Lodge to the eastern side (N708250), not far from the wooded area and were swept from *Calluna* dominated taller vegetation. Two immature specimens were swept from Clara Bog, one on 28 June 2007, the other on 31 July.

This spider is a member of the orb-weaving family and constructs its web near ground level on vegetation. It has clear abdominal markings and a very distinctive white, sometimes triangular, mark on the carapace. This mark is clear on the adult male (though reduced to a short line) and on all three immatures, its presence allowing the Clara specimens to be identified in the field. That the adult male was taken in early May fits with phenological information from Britain where males occur in April and May (Harvey *et al*., 2002). The species possibly breeds slightly later in Sweden where males are found from mid-May to mid-July (Almquist, 2005).

H. albovittata is widely but locally distributed across Britain becoming more scattered in the north (Harvey *et al*., 2002). It is widely distributed, but not very common, across Europe occurring in most European countries and east to the Ural mountains, exceptions being Iceland, Belarus, Latvia, and some of the smaller Balkan states (Helsdingen, 2007). Platnick (2007) notes its presence in North Africa and Almquist (2005) adds Israel.

Given its European distribution and its wide range through Britain, it is not perhaps a great surprise to find the species in Ireland. British records of the spider seem to be largely from heather moorland with some others from chalk grassland (Harvey *et al*., 2002). There is at least one recent record swept or grubbed from a raised bog in Britain but the relevant sub-habitat is not stated (Blackledge, 2007). Almquist (2005) characterises its preferred habitat in Sweden as *Carex arenaria* heath, dry meadows, and sandy places with *Calluna*. This preference for drier habitats is echoed by Hänggi *et al*. (1995) where the majority of records are from dry/semi dry oligotrophic grasslands and coastal dunes. There are a smaller number of records however from other habitats, including Alpine, and some from wet habitats e.g. moist meadows and, raised bog in Finland (Koponen, 1968, cited in Hänggi *et al*., 1995).

***Minicia marginella* (Wider, 1834)**

On 11 April 2007 three submature males of *M. marginella* were swept at Clara Bog from taller vegetation similar to that described above for the records of *H. albovittata*. The sclerites of the adult palp of two of these specimens were visible through the integument, allowing them to be identified accurately and indicating they were very close to final moult. The head area of the adult male carapace is raised into an almost spherical lobe and this structure was very well developed in the specimens. While this spider is small (<2mm), its palish colouration, with grey, longitudinal, lateral bands on the abdomen gives it a very distinctive appearance. The site was revisited on 3 May and this time, six adult specimens were swept from the same area:- two males and four females. Dorsal tibial spination accorded with Snazell's description (1991) but 2-5 and 2-4 spines respectively were seen ventrally on tibia I and II. Two of the specimens had a faint dorsal median band on the abdomen but this was not clear on any specimen. The female epigyne was in some respects different from that illustrated by Snazell (1991) and accorded

more closely with one of the two illustations by Roberts (1993). The site was visited a number of times after May but no more specimens were recorded. Records from Europe are from May to October (Harvey *et al.*, 2002). Interestingly the species has been recorded only once in Britain, in 1987, from an old rockfall at a cliff base near Dover (Snazell, 1991). The species is widely distributed in Europe from Ireland to the Urals though is not recorded from most of the Balkan states or the Iberian peninsula and is generally unknown from the Mediterranean region (Snazell, 1991; Helsdingen, 2007). Platnick (2007) describes its distribution as Palaearctic.

A relatively large number of the few records summarised by Hänggi *et al.* (1995) are from raised bog though the greater proportion are from dry habitats e.g. steppe woodland, dry/semi-dry grasslands. It is also known from various woodland habitats and some cultivated grasslands. The British records were from chalk grassland (Snazell, 1991). Snazell summarises the species' habitat preferences, suggesting it is most commonly associated with dry habitats and can be found among deciduous and coniferous leaf litter, in moss and on sand dunes. However, it also occurs on tall shrubs and herbs including *Ulex* (Gorse) and *Juniperus* (Juniper). It is also known from raised bog in Finland (Koponen, 2002, 2003) where it is considered a rare species. The British and Finnish records were taken in pitfall traps but the fact that all the Clara specimens were collected by sweeping confirms the species' association with taller woody vegetation.

Comment

Two factors suggest these two species are part of an established fauna and not recent advents; *H. albovittata* is present at two similar but geographically distant habitats, *M. marginella* is arguably in a breeding cycle on Clara bog and, both species occur in a similar habitat in other European countries.

The presence of *H. albovittata* at two midlands raised bogs suggests it could be found on others, at least in the same broad geographical zone. If it was found to be widespread at the few remaining such sites, would this mean that the species is part of a long established bog fauna? While it is recorded from raised bog in other European countries, the broad swathe of records are from drier grassland habitats. Could it be the case that the species survives on raised bog

because this habitat has been less destructively impacted than drier grassland habitats where one may expect to find it, and if such habitats were examined would it be found to occur on them? Regardless of whether raised bog is its preferred habitat, the drier, tall-vegetation component clearly functions as an important microsite for the species.

The records of *M. marginella* raise somewhat similar questions. Its association with taller, woody vegetation and forest offers the intriguing possibility that *Betula* woodland on Clara may be influential to its presence. Indeed, given that *Betula* is found also on Lodge bog, and that *H. albovittata* was swept relatively close to, but not within the woodland at that site, it must be asked as to whether this component of the bogs possibly plays a role in the life-cycle of both species?

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A BRIEF ASSESSMENT OF THE SPIDERS (ARANEAE) OF LODGE BOG, CO. KILDARE, IRELAND

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Introduction

Lodge Bog, a raised bog in Co. Kildare, now the property of the Irish Peatland Conservation Council (IPCC), was visited on two occasions in 2005 and a small collection of spiders was made. One of these proved to be a new Irish record and this find is recorded here. Some of the other species have been recorded infrequently or rarely in Ireland and details are also given of these. The paucity of recording of spiders from raised bog generally in Ireland and the brevity of the present study means that no definitive statement can be made regarding the quality of the spider fauna of Lodge Bog. However, it is perhaps surprising that a relatively large number of species (and specimens), that may be of significant interest, were recorded from a raised bog which has been quite severly traumatised as a result of drainage procedures.

Lodge bog

Lodge Bog (N715262) was acquired by the Irish Peatland Conservation Council in 2005 from Bord na Móna. The presence of drainage ditches has caused significant subsidence of the bog, especially along the eastern margin of north Lodge which abuts a large expanse of industrial cutaway bog owned by Bord na Móna (Hurley, 2005a, b). A conservation plan was initiated since this brief survey and included a programme of ditch-blocking. The western edge of the bog is bordered largely by the mineral island of Lullymore. The eastern side of south Lodge and the narrow neck that joins the north and south sections has downy birch *Betula pubescens* woodland and a considerable amount of bog myrtle *Vaccinium myrtillus*. A range of typical bog species dominate the vegetation: *Sphagnum spp., Cladonia sp.,* heather *Calluna*

vulgaris, cross-leaved heather *Erica tetralix,* bog asphodel *Narthecium ossifragum*, common sundew *Drosera rotundifolia,* deergrass *Trichophorum caespitosus*, and white beak-sedge *Rhynchosporon alba*.

Methods

Pitfall traps (n=11) were set in the southern section of Lodge bog (N707251) from 4 to 18 May 2005 along a 20m transect in a rough east-west direction. Specimens were also collected by sieving mosses and *Cladonia*, using a sweep-net and by hand-collecting from on and under vegetation e.g. spotting webs. The traps were emptied on 18 May. The visit on 4 May was restricted to the southern section of the bog. The bog was visited again on 16 August when collecting was restricted to its northern section and was carried out at a number of sites close to the recently constructed north gate, including a stand of *Ulex* close to the bog (but outside of its strict boundaries), on neutral grassland along the north-west margin and on *Calluna* dominated vegetation further into the bog. The same methods were deployed to gather specimens with the exception of pitfalls which were not used.

Spiders were identified using Roberts (1993), Almquist (2005) and Locket and Millidge (1951, 1953). Nomenclature follows Merrett and Murphy (2000).

Results

A total of 152 adult specimens, representing 45 spider species from fifteen families, were identified from Lodge bog and these are detailed alphabetically in the appendix. A good number of immatures were also taken. Of this catch, pitfall traps yielded 60 adults. A number of genera i.e. *Tibellus*, *Drassodes* and *Tetragnatha* were represented only by immatures and these records are not tabulated. While *Hypsosinga albovittata* (Westring) is new to Ireland (Nolan, 2007), a number of other species have only been recorded occasionally in Ireland and these records merit comment.

***Jacksonella falconeri* (Jackson, 1908) (Linyphiidae)**

Previous Irish records of *J. falconeri* are summarised in McCormack *et al.* (2006). The discovery at Lodge bog (18 specimens) contributes to the seeming preference of the species for rather hostile habitats e.g. low nutrient, acidic or highly exposed.

***Meioneta beata* (O.P.-Cambridge, 1906) (Linyphiidae)**

Both of the previous records of *M. beata* are recent:- the earlier also from raised bog (Carbury bog) in Co. Kildare where it was taken on the bog surface (Higgins, 1985). The more recent record was from heather moorland in Co. Tyrone (Johnston and Cameron, 2002). The species is rather local in Britain, fairly widespread and seems to have a preference for open grassland and heathland habitats (Harvey *et al.*, 2002). These authors do note the strong association the spider has with bog and fen-type habitats in Europe (Hänggi *et al.*, 1995). Two males and one female were taken at Lodge bog.

***Walckenaeria nodosa* O.P.-Cambridge, 1873 (Linyphiidae)**

The few records of *W. nodosa* in Ireland may be attributed to some extent to its being most commonly found in winter and spring. It was until recently known only from Co. Monaghan (Pack-Beresford, 1929) but Cawley (2004) added records from Cos Cork, Leitrim, Sligo and Roscommon. All of these records were from wet habitats *viz*. damp grassland with *Alnus*; *Salix*/*Juncus* wetland; dune slack; *Salix*/*Alnus* carr. Cawley (2007) has more recently recorded the species from Tory Island, Co. Donegal.The association with bog, fen and wet forest habitats is strongly echoed by British and other European records (Hänggi *et al.*, 1995; Harvey *et al.*, 2002). One female was collected at Lodge bog.

***Pirata uliginosus* (Thorell, 1856) (Lycosidae)**

The first record of *P. uliginosus* was from Tankardstown bog in Co. Kildare (Bailey, 1973) but it is now known from five counties. Higgins (1985) found it at two raised bogs, Mouds and Mongan, in Cos Kildare and Offaly respectively. It was also recorded from cutover bog in Co. Tyrone (Cowden *et al.*, 1990), from river floodplain in Co. Offaly (Helsdingen, 1996b) and from lowland blanket bog in Co. Leitrim (Cawley, 2004). While to-date most Irish records show a fairly strong association with wetland sites, in Britain it is suggested the species prefers

infertile, calcareous grassland and drying, rank bog and is not particularly associated with wet areas (Harvey *et al*., 2002). In Europe, in general, it is however very strongly associated with raised bog, fen and moist grasslands (Hänggi *et al.*, 1995). Four females were collected at Lodge bog, all in August, two of them with egg-sacs.

***Hahnia helveola* Simon, 1875 (Hahniidae)**

There are a number of early records of *H. helveola* (Pack-Beresford, 1920; 1922: Bristowe, 1939; Helsdingen, 1996a) though some are of uncertain provenance with respect to habitat. Recent records are from leaf litter of mixed woodlands in Cos Waterford and Sligo respectively (Cawley, 2001; 2004) and exposed headland on Tory Island (Cawley, 2007). Most European records are from forest habitats, although there are a smaller number from raised bog and fen (Hänggi *et al.*, 1995). In Britain, the species is scattered with most records from woodland but also from moor, heath and wetland habitats (Harvey *et al*., 2002). One female was recorded at Lodge bog in May.

Comment

Despite the brevity of the examination of Lodge Bog, results suggest a spider fauna of some interest. A number of species are known in Ireland only from raised bog and this allows the suggestion to be made that in spite of significant local drainage, this has perhaps not yet had a definitively negative effect on the spider fauna. It is not possible however to state that the fauna has absolutely not been affected.

The only recorded species that would almost certainly not be found on the open areas of the sampled bog is the salticid *Heliophanus flavipes* (Hahn, 1832). Specimens were swept from *Molinia* vegetation in a sheltered area on the south-eastern side of a stand of *Ulex*. It is considered that all the other species could probably be found on any raised bog of semi-decent condition, although many of these are common species and can be found on a wide range of habitats. The significance, if any, of the presence of *H. albovittata* at Lodge Bog has been discussed by Nolan (2007). However its preference for drier tall vegetation may mean it is not susceptible to the effects of drainage.

A list of spiders from a number of bogs compiled by Higgins (1985) contained 43 species. This composite list has 24 species in common with Lodge, more than 50% of the fauna recorded at the latter site.

A fundamental lack of data makes it uncertain whether the spider fauna of Lodge bog is characteristic of raised bog of good quality or represents a diminished fauna. Such a question can only be answered through detailed assessments of the spider fauna from raised bogs of known quality. Since there is a good likelihood that species with a preference for a particular macrohabitat e.g. woodland, may be found in other nearby habitat e.g. open heath, such assessments should ideally encompass the range of macrohabitats forming raised-bog complexes.

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APPENDIX. Spiders recorded from Lodge bog in 2005. Numbers = male/female. Abbreviations: P = pitfall traps 4-18 May, Si = sieved, Sw = swept, H = by hand, *C* = *Calluna* near gate at north end, *Cl* = *Cladonia*, mo = moss, *Mo* = *Molinia* vegetation, Hv = heath vegetation, u*Cl* = under *Cladonia* on wet substrate. * = new county record, ** = new Irish record.

Species	**4 May (pitfalls 4-18 May)**	**16 August**
**Agelena labyrinthica* (Cl.)		H 0/1 (from nursery web with egg-sac, on *Calluna*)
Agroeca proxima (O.P.-C.)	P 0/1	SwMo 1/0
Alopecosa pulverulenta (Cl.)		H 1/0 (on moss near woodland - mature 24 May)
Antistea elegans (Bl.)		H*Mo* 0/1 (from web in damp depression in substrate)
Araneus quadratus Cl.	H 0/1 (from retreat on Calluna)	SwH 1 (immature)
Arctosa leopardus (Sund.)		0/1 (running on bare soil surface with egg-sac)
Ceratinella brevis (Wider)		*SiCl* 0/1
Clubiona neglecta O.P.-C.		Si*Cl* 0/1
Clubiona trivialis C.L.K.		*SiCl* 1/1; Sw*Mo* 1/2; SwHv 0/1
Dictyna arundinacea (L.)	SwHv 1/1	SwHv 0/1
Enoplognatha ovata (Cl.)		*C* 0/1 (from retreat with egg-sac); Sw 0/1 (*Ulex*)
Ero furcata (Villers)		SwHv 1/0
Gonatium rubens (Bl.)		SwHv 1 /2; SwMo 0/2
Gongylidiellum vivum (O.P.-C.)	P 2/0; Sim 0/1	
**Hahnia helveola* Simon	Si*C* 0/1	
**Heliophanus flavipes* (Hahn)		SwMo 0/2 and 4 submatures.
***Hypsosinga albovittata* (West.)	SwHv 1/0, 1 imm.	
Jacksonella falconeri (Jackson)	P 17/0; Sim 0/1	
Larinioides cornutus (Cl.)		SwHv 1/0 (submature)
Lepthyphantes ericaeus (Bl.)	P 2/1; Hu*Cl* 1/0	

Lepthyphantes tenuis (Bl.)	SwHv 1/0 (mature by 24 May)	HHv 0/1 (from sheet-web in hole in substrate);) H*Mo* 0/1 (small sheet-web in 4 inch deep hole in soil surface)
Linyphia triangularis (Cl.)		SwMo 2/4 (submatures were swept from heath vegetation)
**Meioneta beata* (O.P.-C.)	P 2/0; Hu*Cl* 0/1;	
**Metellina segmentata* (Cl.)		SwHv 0/1; SwMo 0/1
Microlinyphia pusilla (Sund.)	SwHv 1/0	SwMo 0/2
**Minyriolus pusillus* (Wider)	P 1/0	SwHv 1/0
Neon reticulatus (Bl.)	Si*Cl* 4/6 (3 subadults matured by 9 May)	Si*Cl* 0/1
Neottiura bimaculatum (L.)		SwHv 0/2
Neriene clathrata (Sund.)	SwHv 1/0	
Pardosa nigriceps (Thor.)	P 7/7; SwHv 1/1	H 0/1 (open heath – egg-sac)
Pardosa pullata (Cl.)	P 11/5; SwHv 2/0	SwMo 0/1
Peponocranium ludicrum (O.P.-C.)	P 1/0; Si*Cl* 1/0	
Philodromus cespitum (Walck.)	SwHv 1/0 (mature 24 May)	
Pholcomma gibbum (West.)	Si*Cl* 0/1	
Pirata uliginosus (Thor.)		Sim 0/2 (moss filled drainage ditch – one with egg-sac); Sim 0/2 (one with egg-sac)
Pisaura mirabilis (Cl.)		*C* 0/1 (from nursery web with egg-sac)
Robertus lividus (Bl.)	P 1/1	
Savignia frontata Bl.	Si*Cl* 0/1	
Scotina gracilipes (Bl.)		Sim 0/1 (moss filled drainage ditch – matured 18 May); Si*Cl* 0/1 and 1 imm.
Theridion impressum L.Koch		*C* 0/1 (from retreat on *Calluna* with largish spiderlings); H 0/3 (open Heath – one with egg-sac, one with spiderlings, one with neither)
Theridion sisyphium (Cl.)		SwHv 0/2

Trochosa terricola Thorell	P 0/1	
**Walckenaeria nodosa* O.P.-C.	Sim 0/1	
Xysticus cristatus (Cl.)	Sim 0/1 (matured 9 May)	
Zora spinimana (Sund.)	Hu*Cl* 0/1	H*Mo* 1/0

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FINDING JEWELS AMONGST THE REEDS: A REVIEW OF THE IRISH DONACIINE BEETLES (COLEOPTERA: CHRYSOMELIDAE)

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Abstract

The donaciine beetles are a colourful group of beetles which feed on aquatic and wetland plants. The Irish fauna is reviewed and species accounts for each of the Irish species are provided, describing the history and habitat. The provisional distribution is shown on a map which distinguishes between post- and pre-1980 records. The Irish checklist is updated with one species added, *Donacia sparganii* and one, *Donacia dentata*, removed. A full bibliography of references is included.

Introduction

The donaciine beetles (sometimes referred to as reed beetles) are a distinctive and highly attractive group of insects within the family Chrysomelidae. They are phytophagous, feeding especially on freshwater monocotyledonous plants (Menzies and Cox, 1996). The larvae feed on the submerged parts of the plants, breathing by tapping into the intracellular spaces of the host plants. The adults usually feed on the leaves of the same host plant (Menzies and Cox, 1996), but also on pollen of this or other plants, particularly Yellow Iris *Iris pseudacorus*. Pupation within cocoons also occurs underwater, so the species are more aquatic than many of the species

in the more recognised water beetle families.

Donaciine beetles occur worldwide and approximately 160 species have been described (Askevold, 1990). The web site of Fauna Europaea lists 33 species of *Donacia*, 3 *Macroplea* and 10 *Plateumaris* as present in Europe. In Britain and Ireland, the fauna comprises 15 *Donacia*, 2 *Macroplea* and 4 *Plateumaris* species (Menzies and Cox, 1996). In this paper we provide the first comprehensive account of the Irish fauna, which includes a review of the literature records, a listing of all the unpublished records known to us and distribution maps for all the species. We have recorded reed beetles in Ireland since 1988 which has generated most of the records presented here. Unpublished records have also been obtained from other entomologists and from examination of museum collections. One of the reasons for our interest in this group of beetles is that they appear to be sensitive indicators of the habitat quality in freshwaters. In Britain, several species have shown severe declines, although the reasons are unclear (Menzies and Cox, 1996). We hope the baseline data presented here will allow future workers to assess changes in the status of the Irish species as well as providing an incentive to others to record these attractive aquatic beetles. Recognisable fragments of donaciine beetles, particularly *Plateumaris*, are regularly to be seen in peat deposits, opening up the possibility of tracing the arrival of reed beetles over time in conjunction with studies of mitochondrial DNA: this has recently been achieved in Japan (Sota and Hayashi, 2007).

Taxonomy

The classification of the subfamily Donaciinae was reviewed by Askevold (1990) and this proposed three tribes within the subfamily — the Donaciini, Plateumarini and Hemoniini, although the first two were recognised as being paraphyletic. Representatives of all three tribes are found in Ireland. The tribe Donaciini include the highly-coloured species, the vast majority of which are placed in *Donacia* Fabricius. Askevold (1990) reviewed the subgenera of *Donacia*, and raised one, *Donaciella* Reitter to generic status. This has been accepted by some (e.g. Warchałowski, 2003), but not others (Menzies and Cox, 1996). *Donaciella* as defined in Askevold (1990) contains three European species, including *cinerea* and *clavipes* on the Irish

list. The subgenus *Donacia* contains only *crassipes* amongst the European species; all the other European species are included in *Donaciomima* Medvedev. These changes are not universally accepted and we have been conservative here and followed the nomenclature and taxonomy of the latest Irish checklist (Anderson *et al.*, 1997).

All the species of the tribe Plateumarini, with the exception of one Nearctic species, are placed in *Plateumaris* Thomson by Askevold (1990). The European *Plateumaris* are stockier insects than most donaciines with rounded elytra, prominent metafemoral teeth and inverted elytral sutures (Menzies and Cox, 1996). The separate status of *Plateumaris discolor* and *P. sericea* is disputed by some. Askevold (1991) synonymised the two but they are considered separate species in the latest British and Irish checklists and by Menzies and Cox (1996).

The Hemoniini are quite different from the other species as they are non-metallic beetles with a prominent spine on the outer apical angle of each elytron. The underside is not densely hairy as in the other species. The three European species in this tribe are included in the genus *Macroplea* Samouelle. They are the most aquatic of the group, the adults and larvae living submerged on their host plants, species of Haloragaceae (milfoils), Potamogetonaceae (pondweeds) and Zosteraceae (eel-grasses).

Identification

With the exception of the *Macroplea* species mentioned above, initial identification of a beetle as a donaciine is relatively straightforward as they are robust, elongate beetles with long antennae, densely hairy undersides and, in most species, bright, often metallic, elytra. The thorax and elytra are punctate and sculptured which provides useful microscopic characters. The legs are robust with large, clawed tarsi that give the beetle excellent grip on the leaves of their foodplants. A key to the tribes and genera of Palaearctic donaciines is provided by Askevold (1990) and Warchałowski (2003). Species identification is more problematic. The colour of the adults of some species is prone to intraspecific variability so this most obvious and attractive feature of the adults has to be used with care. The structure and size of the two sexes differ in most species and there is also variation in appearance within and between sites. As with all

insect identification, access to reliably-named vouchers is of great assistance in making correct determinations and to appreciate the characteristics of each species. This should be complemented with field study of the species. The most up-to-date keys in English are provided by Menzies and Cox (1996), Warchałowski (2003) and Bieńkowski (2004). The keys in Fowler (1890) and Joy (1932) both suffer from poor discrimination of characters, inadequate illustrations and outdated taxonomy. Mohr's key (1966), in German, includes illustrations of all the male genitalia, providing critical characters for discriminating some of our species. The only way to judge the sex of adults externally is on size. The males are generally smaller and slimmer which is usually obvious in a sample containing both sexes, but can be difficult to judge on a single individual. Adults may reveal their sex and species after capture as they tend to be promiscuous even within the confines of a collecting tube. Additional identification characters and photographs of the pronotal sculpturing are given in Bratton and Greenwood (1997). Colour illustrations or photographs of the species appear in a number of publications including Fowler (1890), Menzies and Cox (1996) and du Chatenet (2002) and on web pages (http://culex.biol.uni.wroc.pl/cassidae/European%20Chrysomelidae/donaciinae.htm or http://www.coleopterist.org.uk). It must be recognised that photographs, whilst useful in giving a general impression of the species, rarely convey accurately the colour of the insects due to the high reflectivity of the elytra.

Biology

Donaciines are phytophagous beetles intimately linked with aquatic and wetland plants so are usually found close to open water. The larvae, pupae and cocooned adults of all of the species are aquatic. The aquatic stages are found around the roots of the host plants and these breathe by tapping into the intracellular airspaces of the host plants (Menzies and Cox, 1996). The adult phase is the most terrestrial, but even adults will rarely stray far from water. At individual sites the adults of the *Donacia* species are found most easily on plants growing in the swamp zones, but occasionally they may be seen on flowers in adjacent habitats. The common Irish *Plateumaris* are less closely tied to open water and frequently occur on bogs and fens.

Whilst the adults of the *Donacia* and *Plateumaris* species emerge from the water, adult *Macroplea* remain in the water.

Collecting, field observation and recording

A useful review of techniques for collecting donaciines is given in Menzies and Cox (1996). The adult is the easiest stage to find and collect. In general the most effective techniques are sweeping stands of aquatic plants and hand searching. Sweeping is a rather hit-or-miss technique and it can be impossible to associate the species with a foodplant where vegetation is mixed. Hand searching is much less indiscriminate and more time-consuming, but it allows the species to be associated directly with a host plant.

To collect the aquatic species and those that live on floating leaves requires the use of pond nets. Comments applicable to individual species are given in the species accounts. Finding larvae and cocoons is reportedly much more difficult, as it involves searching amongst the roots of host plants. This necessitates the removal of whole plants from the habitat which is clearly very destructive (Menzies and Cox, 1996) and it is not a collecting technique we have employed. The only exception is *Macroplea*, whose cocoons can be found amongst the leaves and stems of their host plants (Monahan and Caffrey, 1996).

There is no organised recording scheme for the Irish donaciines so the first stage in preparing this review was to construct a database of all the records. A copy of this database will be deposited with both the National Biodiversity Data Centre (Waterford) and CEDaR, the biological records centre for Northern Ireland in the Ulster Museum, Belfast. The database held 815 records at the end of 2006 and these records have been used to produce the species accounts and maps in this paper. The records have been obtained from examination of museum collections, published accounts and field recording. We have thoroughly examined all the donaciine specimens in the National Museum, Dublin (NMI) and the Ulster Museum, Belfast (UM). As opportunity has arisen, we have searched the natural history collections of some British museums for Irish material and this information has also been incorporated. Some surprising finds have resulted from this effort. The literature has been thoroughly searched for

published records including all the pages of the *Irish Naturalist*, *Irish Naturalists' Journal* and the *Bulletin of the Irish Biogeographical Society*.

The quality of the information gathered from these sources has been very variable which has posed problems with entering the records in the database and subsequently mapping them. Details of the locality, date of collection and collector were frequently missing from the papers and the museum specimens. However, by cross-referencing specimens to other examples or to the publications, some of the missing data has been obtained. Where this has happened, we have provided this information, denoting it with square brackets. For example in both the NMI and UM there are specimens of *Donacia clavipes* collected by Buckle and labelled 'Belfast'. Some, but not all, of these also had Portmore Lough in Buckle's distinctive handwriting on the underside of the card mount. Portmore Lough is located some 30km west of Belfast and we consider that all these specimens came from there and that the Belfast label is inaccurate information. Another particular problem concerned specimens with labels 'Dublin' or 'Armagh', as it is usually not clear whether this is referring to the county or just the city. Yet other specimens which clearly were vouchers for published records were found to lack some of the details given in the publication. For example, the date Halbert collected *Plateumaris bracata* at Killurin (Wexford), comes not from a label attached to the specimen in the NMI, but from the data associated with a record of *Zicrona caerulea* (L.) (Hemiptera, Heteroptera, Pentatomidae) published in Halbert (1935).

Species accounts

The species accounts cover all the Irish species and include for each a complete listing of all published records and unpublished records of which we are aware. The unpublished records come from our field recording, the study of museum collections and from colleagues and other naturalists. All these records have been entered into a database held jointly by the authors.

In the following section, the species are listed alphabetically within each genus. Each species account is structured into three sections. Historical overview details the published and unpublished records before 1980, followed by a summary of the records gathered between 1

January 1980 and 31 December 2006. The records are then listed chronologically by county. All the records are listed with the exception of a few published records or specimens for which the information is so vague that it adds no useful information. This applies to just a small number of records, including most of those listed on Haliday's manuscript list and Buckle's records from the Foyle District (Buckle, 1900). Finally, we provide a review of the species ecology and distribution in Ireland.

The distribution of species is mapped with symbols indicating presence in 10km grid squares (Figures 2 to 20). Figure 1 shows the geographical coverage of all the records we have been able to trace and assign to a 10km grid square. The maps distinguish between squares with just pre-1980 records (shown by an open circle) and those with a post-1980 record (closed circle). We have had to assign a 10km square to the old records which lacked grid references. Where this has been done the grid reference is placed inside square brackets. Other information surrounded by square brackets is, similarly, data we have assumed.

Donacia aquatica (Linnaeus, 1758)

Historical overview

This is called *D. dentipes* in earlier literature including Johnson and Halbert (1902) where it was listed from Armagh, Down, Galway, Limerick, Westmeath and Wicklow. Detail is lacking for the records apart from the comment that it was 'common in drains near the southern shore' of Lough Ennell (Westmeath). Earlier, Johnson (1889) reported finding a specimen 'in moss from the margin of a little lake called Drummond' (Armagh) in October 1888. This site is referred to as Drummanbeg Lough in Johnson (1892) and by this name on modern Ordnance Survey maps. Voucher specimens in the NMI and UM support unpublished Halbert records from Moycullen (Galway) and Westport (Mayo).

1980 onwards

We have not traced any Irish records of *D. aquatica* between 1909 (the date of Halbert's Westport record) and 1992 when Andy Foster swept one from lakeside vegetation on the south shore of Inishfendra on Upper Lough Erne (Fermanagh) on 28 May (Nelson and Anderson,

1999). Another ten years elapsed before the next record from Lough Graney (Clare) in May 2002. A single individual was swept from *Carex rostrata*-dominated vegetation at the northern end of the lake. The following year it was found at the same site during the Irish beetle field meeting. This meeting produced more records from several coleopterists from Portumna Forest Park and Lough Cutra (Galway) and Charleville (Offaly).

Irish distribution

See Figure 2.

ARMAGH: Drumman Beg Lough, [H8947], October 1888, W. F. Johnson, published Johnson (1889). The site was called Drummond in the original publication, but by this name in Johnson (1892); **CLARE:** Lough Graney, R559949, 27 May 2002, B. Nelson, **UM** and same site, 25 May 2003, G. N. Foster; **DOWN:** Newcastle, [J33], date unknown, G. C. Champion, published Johnson and Halbert (1902); **FERMANAGH:** Inishfendra, H373237, 28 May 1992, A. P. Foster, published Nelson and Anderson (1999); **GALWAY:** Clonbrock, [M73], date unknown, R. E. Dillon, published Johnson and Halbert (1902); Moycullen, [M23], date unknown, J. N. Halbert, **NMI** and **UM**; Lough Cutra, R485986, 25 May 2003, G. N. Foster and R486987, 25 May 2003, T. van Haaren; Portumna Forest Park, M841032, 26 May 2003, G. N. Foster and same data, M. G. Telfer; **LIMERICK:** locality unknown, date unknown, A. R. Furlong, published Johnson and Halbert (1902); **MAYO:** Westport, [L98], June 1909, J. N. Halbert, **NMI** and **UM; OFFALY:** Charleville, N316227, 24 May 2003, R. Anderson; **WESTMEATH:** Lough Ennell southern shore, [N44], date unknown, J. N. Halbert, published Johnson and Halbert (1902); **WICKLOW:** Arklow, [T27], date unknown, A. R. Furlong, published Johnson and Halbert (1902).

Donacia aquatica, arguably the most attractive of the Irish species, is one of the easiest *Donacia* to identify. Adults are relatively small and slim with green elytra, each bearing a broad central stripe of gold, red and purple. It has been recorded from a small number of sites in nine counties, but there is no obvious pattern to the distribution. All the recent records have come from fens beside large lakes in the midlands and west. This differs somewhat from the pattern of the older records which also includes records from the east. The species appears genuinely rare,

both on an all-Ireland level and at individual sites. Apart from Halbert's comment regarding its status at Lough Ennell, it does not appear to have ever been taken in the abundance shown by other species. This rarity is also apparent in Britain, where this is considered one of the most threatened *Donacia* species (Menzies and Cox, 1996), an opinion endorsed by a recent survey (Foster *et al.*, 2007) which revealed a decline of 81% in the number of occupied 10km squares in Britain since 1980. Losses are attributed to agricultural intensification, industrialisation and natural successional change. Whilst sites in Ireland were not included in the survey, they are considered to provide the stronghold of the species in these islands (Foster *et al.*, 2007). As well as providing an assessment of the current status and population trend of *D. aquatica*, this survey also provided useful insights into the ecology of the species.

Adults are apparently active earlier than most other *Donacia*. In Britain, records are overwhelmingly from May and June with some in July, September and October (Foster *et al.*, 2007). All the recent Irish records are from May. The October adult found by Johnson presumably was a newly-matured adult in its overwintering site. Recording of the species may be hindered by its early season, but also by the wariness of the adults as they have a propensity to move position in response to an observer and drop off plants or fly away when the foliage is disturbed (Foster *et al.*, 2007). The beetle is most often detected by chance by sweeping stands of aquatic vegetation, although adults have been observed sitting head down on the tips of sedge leaves (Foster *et al.*, 2007).

There is little information on plant association in Ireland, but in Britain it is usually found by sweeping patches of sedges such as *Carex acutiformis* (Menzies and Cox, 1996). The association with sedges was confirmed in the survey in Britain where it was found to favour flowering patches of *Carex acutiformis*, *C. rostrata* and *C. vesicaria* growing in water (Foster *et al.*, 2007). It was also found once on *C. diandra* but showed a strong negative association with *C. riparia* (Foster *et al.*, 2007). du Chatenet (2002) states the host plants include *Carex acuta*, *Typha latifolia* and *Ranunculus lingua*.

***Donacia bicolora* Zschach, 1788**

Historical overview

Listed from Armagh, Down, Dublin, Kerry, Kildare, Limerick and Westmeath (said to be common here) by Johnson and Halbert (1902). We can trace no published records between 1902 and 1988, but there are two voucher specimens supporting records from Poyntzpass (Armagh) collected by Johnson in 1906 and 1912.

1980 onwards

In June 1988 *D. bicolora* was found at two sites in Fermanagh by Garth Foster (Nelson and Anderson, 1999), the first of many records from this county. It has proved to be particularly common and widespread in the swamps around Upper Lough Erne. We have also found this species widely in the midlands of Ireland recording it from counties Cavan, Galway, Leitrim, Longford, Mayo, Meath, Monaghan, Roscommon, Sligo and Tyrone in addition to those already mentioned. We consider that it remains under-recorded, especially in the Shannon valley and the lakes in the limestone regions of the midlands and west. Most of the records have been from lakes, but it has also been found along rivers and ditches. According to Menzies and Cox (1996) the host plant is *Sparganium erectum,* but a wider range of host plants (*Sparganium erectum, Sagittaria*, *Typha*, *Carex*, *Phragmites* and *Glyceria*) is implied in du Chatenet (2002). However, our experience is in agreement with Menzies and Cox (1996), as the adults are almost invariably found on *Sparganium erectum*.

Irish distribution

See Figure 3.

ARMAGH: Poyntzpass, bank of Newry Canal, [J0539], 9 June 1906, W. F. Johnson, **UM**; and same data 17 June 1912, **UM**; Lough Neagh, Maghery, [H96], 28 May 1887, W. F. Johnson, published Johnson (1888), **NMI** and **UM**; Kiltubbrid Loughs, H769397, 19 June 1997, B. Nelson, published Nelson and Anderson (1999), **UM; CAVAN:** Dromore River, H646164, 27 June 2001, B. Nelson; Lough Sheelin, Kilnahard, H430855, 28 June 2001, B. Nelson; Mullagh Lough, N680858, 22 July 2001, J. Walsh; Drumgorry Lough, H415167, 29 June 2002, B. Nelson; Clonty Lough, H274124, 11 July 2002, B. Nelson; Lough Oughter, Trinity Island,

H351042, 11 July 2002, B. Nelson; **CLARE:** Finn Lough, R435703, 26 May 2003, R. C. Welch; Lough Bunny, R371960, 27 May 2003, M. N. Smith and same data, M. G. Telfer; Inchicronan Lough, R404869, 5 July 2003, J. Walsh; Dromore Castle Lough, R355865, 6 July 2003, J. Walsh; **DOWN:** Lagan Canal near Moira, [J16], date unknown, C. W. Buckle, published Fowler (1891), **NMI** (this specimen is labelled 'Belfast' but is still considered the voucher for this record); **DUBLIN:** Portmarnock, [O24], date unknown, published Hogan (1854); **FERMANAGH:** Upper Lough Erne, Inisherk Island, H358244, 21 June 1988, G. N. Foster, published Nelson and Anderson (1999); Lough Coole, H255435, 24 June 1988, G. N. Foster, published Nelson and Anderson (1999); Upper Lough Erne, Bleanish Island, H354257, 27 May 1992, A. P. Foster; Upper Lough Erne, Corraharra Townland, H355237 and H355230, 27 May 1992, K. N. Alexander; Upper Lough Erne, Dernish Island, H349264 and H346261, 27 May 1992, A. P. Foster; Upper Lough Erne, Mullynacoagh Townland, H356227, 27 May 1992, K. N. Alexander; Upper Lough Erne, Inisherk Island, H358243, 28 May 1992, A. P. Foster; Upper Lough Erne, Inishfendra, H375236 and H370237, 28 May 1992, A. P. Foster; Upper Lough Erne, Reilly Wood, H339242, 28 May 1992, K. N. Alexander; Lough Coole, H2543, 2 June 1992, A. P. Foster; Upper Lough Erne, Derrybeg West and Derrymacrow Townlands, H364251, 4 June 1992, A. P. Foster; Upper Lough Erne, Corradovar Townland, H3029, 28 June 1994, B. Nelson, published Nelson and Anderson (1999), **UM**; Upper Lough Erne, Knockninny, H275315, 19 June 1998, B. Nelson; Coolyermer Lough, H180427, 25 June 1998, B. Nelson, **UM**; Upper Lough Erne, Ring Townland, H237392, June 1999, B. Nelson, **UM**; Upper Lough Erne, Inishcreenry, H300336, 17 June 1999, B. Nelson; Upper Lough Erne, Derrykerrib Townland, H418208, 1 July 1999, B. Nelson, **UM**; Upper Lough Erne, Galloon Townland, H3922, 1 July 1999, B. Nelson; Upper Lough Erne, Inisherk Bridge, H359244, 27 June 2000, B. Nelson; Upper Lough Erne, Corradillar, H332281, 7 August 2005, B. Nelson; **GALWAY:** Lough Corrib, Angliham, M290302, 26 May 2004, B. Nelson, **UM**; near Rockhill, R420952, 27 May 2004, B. Nelson; Lough Derg, Rosmore Quay, R792963, 5 August 2006, B. Nelson, **UM; KERRY:** Killarney, [V99], date and collector unknown, published Fowler (1891); **KILDARE:** Carton demesne, Maynooth, [N9638], 26 May 1894, G. H. Carpenter and

H. G. Cuthbert, published Anon (1894), **NMI; LEITRIM:** Gortinty Lough, N020958, 7 July 2002, J. Walsh; **LIMERICK:** Lough Gur, [R64], date unknown, J. N. Halbert, published Johnson and Halbert (1902); Lough Gur, R642401, 28 July 2000, J. Walsh; **LONGFORD:** River Erne, Scrabby Bridge, N321902, 6 August 2000, J. Walsh; Derrymacar Lough, N087583, 10 July 2002, B. Nelson; **MAYO:** Lough Mask, Cuslough Pier, M152650, 17 June 2005, B. Nelson; **MEATH:** Boyne Canal, east of Slane, N971732, 24 June 2001, J. Walsh; Corstown Lough, N891914, 14 June 2003, J. Walsh; Whitewood Lake, N790883, 20 September 2006, B. Nelson, **UM; MONAGHAN:** Rahans Lough, N831980, 13 August 2000, J. Walsh; **ROSCOMMON:** Mote Park, [M86], date unknown, J. N. Halbert, published Johnson and Halbert (1902), **NMI; SLIGO:** Lough Arrow, Bellarush Bridge, G770155, 6 August 2003, B. Nelson, **UM; TYRONE:** Lough Na Blaney Bane, H580475, 15 June 1999, B. Nelson, **UM**; Fymore Lough, H5951, 13 June 2000, B. Nelson, **UM; WESTMEATH:** Mullingar, [N45], date unknown, J. N. Halbert, **NMI**; Lough Analla, N596617, 31 May 2000, C. Ronayne; River Inny, downstream Lough Derravaragh, N389666, 15 July 2000, J. Walsh; Lough Kinale, N395810, 28 June 2001, B. Nelson; Lough Derravaragh, Coolure, N424690, 23 May 2003, B. Nelson.

This is one of the largest *Donacia* species in Ireland, some females being particularly large and broad across the base of the elytra. Most adults are instantly recognised by the bright golden-green colouring and the prominent fovea on the elytra. The colour changes as the season progresses and late adults appear darker. The shape and robustness of the beetle however remains distinctive. *D. bicolora* is an active species and flying adults are a common sight moving within stands of Branched Bur-reed *Sparganium erectum*. It can easily be found on isolated plants indicating high mobility of the adults. Sweeping is the simplest way to find it, but once alert to its presence at a site, searching by eye or binoculars for adults is also very effective. They tend to perch conspicuously on the wide leaves of *Sparganium erectum* about half way down the plant with their head pointing down but, if disturbed, they drop into the water. Once there, the adults appear to skate over the water surface with half open wings until they reach a plant stem up which they can climb. Adults have been reported between 6 May (1894) and 20 September (2006) but with the majority of records between the end of May and

the beginning of July.

The relative abundance of this species in Ireland contrasts with its reported rarity in Britain where a significant decline has been evident and it is now restricted to a few populations in southern England (Menzies and Cox, 1996) and one in Wales (Breconshire in 2006, John Bratton pers. comm.). The species is classified as RDB2 in Great Britain (Menzies and Cox, 1996) and it is listed along with *D. aquatica* as a UK Biodiversity Action Plan priority species.

***Donacia cinerea* Herbst, 1784**

Some authorities follow Askevold (1990) and place this is in a separate genus, *Donaciella*, along with *D. clavipes*.

Historical overview

This was included on the Irish list by Johnson and Halbert (1902). The account reads 'This species is included on the strength of a note in the Haliday MS list, indicating that it was found at Lough Neagh by Mr T. V. Wollaston, the specimens having been seen by Mr Haliday.' We have been unable to trace a voucher for this record and because of the vagueness of the locality it cannot be mapped. No reference to this record appears in Fowler (1891), but Joy (1932) did state that it was present in Ireland.

1980 onwards

Confirmation of *cinerea* as an Irish species was provided by Speight (1986) who collected it at Ballynafid Lough (Westmeath) in 'large numbers' by sweeping 'emergent lake edge vegetation bordering fen' at a 'limestone lake' first on 21 July 1982 and 'subsequently'. We have found the species just three times, once from Ballynafid Lough and additionally from single sites in Leitrim and Limerick.

Irish distribution

See Figure 4.

LEITRIM: Lough Erril, N047967, 6 July 2002, B. Nelson, **UM; LIMERICK:** Curraghchase Pond, R413493, 6 July 2003, J. Walsh; **WESTMEATH:** Ballynafid Lough, N4060, 21 July 1982, M. C. D Speight, published Speight (1986); Ballynafid Lough, N411608, 15 July 2000, J.

Walsh.

With so few Irish records it is impossible to say anything definitive about the habitat and distribution of this species. However, it clearly must be viewed as one of the rarer species. The persistence and ease of finding it at Ballynafid Lough contrasts with its low frequency elsewhere. This would appear to be genuine, unless there is some unknown reason for it being more difficult to find than other *Donacia*, as the adults are unmistakable in the field. The whole upper surface is covered in a short, grey pubescence which completely obscures the bronzy metallic colouring. The Irish records have all been in July which is at the end of the adult season given in Menzies and Cox (1996) of May to early July. The only host plant given by Menzies and Cox (1996) is *Typha latifolia*, whereas du Chatenet (2002) lists *Phragmites*, *Sparganium erectum* and *Carex* in addition to *Typha*. There is little information on host plant usage in Ireland. The most recent Ballynafid Lough specimen was found on *Typha latifolia*.

***Donacia clavipes* Fabricius, 1792**

Historical overview

This was recorded for the first time in Ireland by Halbert 'by sweeping aquatic plants on an islet in Lough Ree' in the first week of June 1897 (Halbert, 1898a; Praeger, 1898). The locality is described in Johnson and Halbert (1902) as 'a reedy islet near the middle of the lake' and assigned to Roscommon. Only one other record (from Dromoland Castle, Clare) is given in Johnson and Halbert (1902) and they state it is 'apparently a scarce species in Ireland.' Museum collections contain *clavipes* specimens collected by Buckle, Halbert and Johnson in the early 1900s which add records from Antrim, Armagh, Galway, Kerry and Mayo. There are at least seven specimens collected by Buckle on 26 June 1902. Three of the specimens have a printed label 'Lough Neagh' attached and one has a 'Belfast' label. However, all these specimens have Portmore Lough written on the underside of the card mount in Buckle's distinctive writing. It is assumed that all voucher specimens of this species bearing a Lough Neagh or Belfast label and with this date were collected at Portmore Lough.

1980 onwards

A record of *clavipes* from Westmeath was published by Bilton (1988). We have taken the species or been supplied records from Cavan, Clare, Donegal, Down, Fermanagh, Galway, Kerry, Monaghan, Roscommon, Tyrone and Westmeath.

Irish distribution

See Figure 5.

ANTRIM: Portmore Lough, [J1168], 26 June 1902, C. W. Buckle, **NMI** and **UM; ARMAGH:** Newry Canal, [J02], 28 June 1902, W. F. Johnson, published Johnson (1903), **UM; CAVAN:** Lough Sheelin at Crover, N472862, 28 June 2001, B. Nelson; Drumgorry Lough, H415167, 29 June 2002, B. Nelson; **CLARE:** Dromoland Castle, [R3870], date unknown, R. E. Dillon, published Johnson and Halbert (1902); Lough Avoher, R524741, 24 May 2003, G. N. Foster; **DONEGAL:** Carricknahorna Lough, G928657, 22 June 2001, B. Nelson; Lough Gorman, G915667, 22 June 2001, B. Nelson; **DOWN:** River Quoile, Inch Abbey, J477455, 28 June 1985, R. Anderson; Derryleckagh Fen, J117253, 19 June 1991, G. N. Foster; **FERMANAGH:** Cornagague Lough, H474303, 21 June 1988, G. N. Foster; Friars Lough, H368268, 21 June 1988, G. N. Foster; Lough Nalughoge, H365243, 21 June 1988, G. N. Foster; Killyhommon, H129459, 23 June 1988, G. N. Foster; Upper Lough Erne, Derrylea Townland, H346273, 15 June 1994, B. Nelson, **UM**; Coolyermer Lough, H181424, 25 June 1998, B. Nelson, **UM**; Legalough, H089346, 10 June 1999, B. Nelson; Upper Lough Erne, Coolbeg Townland, H304342, 17 June 1999, B. Nelson, **UM**; Doagh Lough, H077522, 24 June 1999, B. Nelson; Upper Lough Erne, Inisherk Bridge, H359244, 27 June 2000, B. Nelson; Tullyvocady Lough, H058646, 22 June 2001, B. Nelson, **UM**; Crom, H363246, 29 June 2002, B. Nelson; Keenaghan Lough, G973599, 18 June 2003, R. Anderson; **GALWAY:** Moycullen, [M2133], 1 June 1903, J. N. Halbert, **NMI**; River Corrib, Galway, M282280, 30 May 2003, S. McCormack; Ballyturin Lough, M496004, 5 July 2003, J. Walsh; **KERRY:** Muckross, [V9686], date unknown, **NMI**; Killarney, bog pond [V904804], 3 June 1927, E. F. Bullock, **NMI,** and same site, 23 May 1929, E. F. Bullock, **NMI** (grid reference taken from O'Connor *et al.* 1986); Lough Gill, Q600137, 21 July 1998, B. Nelson; Doo Lough, V948863, 12 June 2005, B. Nelson; **MAYO:** Louisburgh,

[L7579], July 1910, **NMI**; Derradda, M166695, 22 June 2002, C. Ronayne; Callow Lough, G318037, 12 July 2004, J. Walsh; **MONAGHAN:** Summerhill Lough, H491280, 28 June 2000, B. Nelson; **ROSCOMMMON:** Lough Ree, [M96], June 1897, J. N. Halbert, published Halbert (1898a); Lough Ree, Yew Point, N012470, 6 July 2000, B. Nelson; Kilglass Lough, M979840, 7 July 2002, J. Walsh; **TYRONE:** Lough Fadda, H446484, 11 June 1999, B. Nelson, **UM** and 14 June 2000, B. Nelson, **UM**; White Lough, H705525, 25 June 2003, B. Nelson; **WESTMEATH:** Ballynafid Lough, N4160, August 1986, D. T. Bilton, published Bilton (1988), **NMI**; River Inny, downstream Lough Derravaragh, N389666, 15 July 2000, J. Walsh; Ballynafid Lough, N411608, 7 July 2002, J. Walsh.

Donacia clavipes is one of two Irish species placed in genus *Donaciella* (Askevold, 1990). It is perhaps our most immediately distinctive species owing to the combination of the elongate, parallel-sided elytra, metallic green colouring and long pale orange-red legs and antennae.

The species is clearly not as scarce as previously thought and its distribution is extensive in the west and north. It can be found on its host plant, Common Reed *Phragmites australis*, beside lakes, fen ponds and slow-flowing rivers. The adults often sit in the folded leaf bases where it joins the stem and are most easily found by sweeping or beating the reed stems. The feeding damage, serpentine scrapings on the leaves, often give early warning of the presence of this species. Most of the records come from habitats where reed is present in small amounts rather than dense, very luxuriant reed beds. This, however, may reflect the difficulty of sweeping in very dense reed beds rather than a genuine habitat preference. Our records are from between 18 May and 7 July, and there is one published August record (Bilton 1988).

Donacia crassipes Fabricius, 1775

Historical overview

The first mention of *D. crassipes* in the Irish literature is in Hogan (1854) which refers to a record by Tardy from Dublin, but without giving the date or collecting locality. Johnson (1895) includes a record of *D. crassipes* from Donegal, but the details are contradictory. In the introductory paragraphs it is stated that *D. crassipes* was taken in a pond at Templenew, but

later in the paper it is listed only from Coolmore. Only the Coolmore record is mentioned in Johnson and Halbert (1902) and there is a voucher bearing the label Coolmore in the NMI, Dublin. Whilst this suggests the Templenew record is incorrect, we have listed and mapped both of these Donegal records. Confusion also exists concerning the location in Kerry of the *crassipes* records of Yerbury as reported in Champion (1901). The collecting locality is given as 'Kenmare and Caragh Lake' in Champion (1901) but simply as 'Kenmare' in Johnson and Halbert (1902). Johnson and Halbert (1902) described *D. crassipes* as 'Local, occasionally found in numbers on *Nymphaea*' and listed records from Cork, Donegal, Dublin, Kerry, Kilkenny and Londonderry. The only other published records we have traced are in Halbert (1904) and Crawford (1934). According to the former, *D. crassipes* was 'common on leaves of Water-lilies in shallow pools on the shore of Lough Gill'. It was also listed as Irish in both Fowler (1891) and Joy (1932).

1980 onwards

Our records of this species come from Cavan, Fermanagh, Kerry, Leitrim and Monaghan. Based on our experience in lakes in Monaghan and a small part of Killarney National Park, where it proved easy to find on suitable sites, we consider this species is much under-recorded.

Irish distribution

See Figure 6.

CAVAN: Corrakane Lough, 3 August 1981, H408001, J. P. and M. A. O'Connor, **NMI**; Drumgorry Lough, H415167, 29 June 2002, B. Nelson; Lough Sheelin, Crover, N472862, 28 June 2001, B. Nelson, **UM**; Roosky Lough, H645045, 27 June 2001, B. Nelson, **UM; CORK:** Shreelane (Shepperton) Lakes, [W13], date unknown, J. N. Halbert, published Johnson and Halbert (1902), **NMI; DONEGAL:** Coolmore, [G86], July 1894, W. F. Johnson, published Johnson (1895); Milford, [C12], date unknown, J. A. Osborne, published Johnson and Halbert (1902); Templenew, [G86], July 1894, W. F. Johnson, published Johnson (1895); **DUBLIN:** site and date unknown, J. Tardy, published Hogan (1854); **FERMANAGH:** River Finn, Gortnacarrow Bridge, H434205, 11 July 1934, W. M. Crawford, published Crawford (1934), **UM**; Killyhommon, H129459, 23 June 1988, G. N. Foster; Lough Coole, H255435, 24 June

1988, G. N. Foster; Upper Lough Erne, Inisherk Bridge, H358243, 27 June 2000, B. Nelson, **UM**; Upper Lough Erne, Derrykerrib Townland, H418208,1 July 1999, B. Nelson; **GALWAY:** Maam Cross, L9746, 11 July 2004, J. Walsh; **KERRY:** Kenmare and Caragh Lake, date unknown, J. W. Yerbury, published Champion (1901); Caragh lakes, date unknown, A. R. Furlong, published Johnson and Halbert (1902); Caragh River, Glencar, [V78], 8 July 1934, G. M. Stelfox, **NMI**; Galway's River, V915798, 9 July 2005, B. Nelson; Lough Beg, V893812, 11 June 2005, B. Nelson; Lough Doo, V949862, 12 June 2005, B. Nelson; Pond at Cahernaduv, V886813, 11 June 2005, B. Nelson; Pond at Glaishin na Marbh, V929845, 7 July 2005, B. Nelson; **KILKENNY:** River Nore, Thomastown, [S54], date unknown, J. N. Halbert, published Johnson and Halbert (1902), **NMI; LEITRIM:** Headford Lough, N0199, 9 July 2002, B. Nelson, **UM**; Lough Boderg, Derrycarne amenity area, N023924, 9 July 2002, B. Nelson; **LONDONDERRY:** Lough Neagh, Ballinderry River mouth, [H98], date unknown, R. J. Welch, published Johnson and Halbert (1902), **NMI**; Toome, [H99], 10 May 1894, published Johnson and Halbert (1902), **NMI; MONAGHAN:** Cormeen Lough, H673158, 27 June 2001, B. Nelson; Greagh Lough, H6427, 27 June 2001, B. Nelson; Killygola Lough, H825216, 25 June 1999, B. Nelson; Kilroosky Lough, H493273, 28 June 2000, B. Nelson, **UM**; Muckno Mill Lough, H844226, 25 June 1999, B. Nelson, **UM**; Summerhill Lough, H4928, 28 June 2000, B. Nelson; **SLIGO:** Lough Gill, [G73], July 1904, J. N. Halbert, published Halbert (1904).

The distribution map shows the records are concentrated in two areas, the south-west and the drumlin belt of Ulster. The absence from much of the west, especially Galway and Mayo, is inexplicable as suitable habitat seems abundant; this apparent absence is likely to be simply due to under-recording. The old record from the River Nore (Kilkenny) and the recent one from Maam Cross (Galway) hint at a wider distribution, the true extent of which may be revealed by more intensive searches for the species.

This is a large donaciine with a flattened shape and robust, strongly curved hind femora. The only similar species are *D. versicolorea* and *D. dentata*. The elytra are dark blue-black with rows of punctures which are golden-yellow when they catch the light.

D. crassipes is a midsummer species. The records are concentrated in a few weeks from

mid-June to mid-July, somewhat later in the season than the species found in marginal vegetation. There has been one record in early May and one in August. The host plants of *D. crassipes* are the water lilies *Nuphar lutea* and *Nymphaea alba* (Menzies and Cox, 1996) and we have collected the species from both species in ponds, lakes and rivers. The adults should be looked for in sunny weather when they will be active, either moving about with a distinctive scuttling gait on the surface of the lily pads, or flying from plant to plant. However, the adults are easily disturbed and will either crawl to the underside of a leaf or fly to less accessible leaves in response to any nearby movement. Due to this combination of inaccessible habitat (usually offshore and in deep water) and behaviour (response to disturbance), the species can be easily overlooked. The adults are most easily detected by searching water lily pads with binoculars, but as many other similarly-sized insects also rest on these leaves, care should be taken in claiming records based on sight only. Catching the beetles to confirm their identity requires a net. A clap net suitable for catching this species is illustrated in Menzies and Cox (1996), but a long-handled pond net is as effective. A useful technique is to splash the water near a water lily plant to wash the beetles into the water; these can then be scooped off the water surface with a net. The inaccessibility of the water lily pads is a major problem to finding the species especially at small lakes with *Nuphar lutea*. This water lily typically grows on the outer edge of the fringing swamps and the floating leaves are often invisible (and impossible to reach) from the shore. Lakes with fishing platforms which extend beyond the fringing marginal plants are the best lakes to target for surveys (the Monaghan records all came from lakes with these platforms). An alternative is to use a boat. This visibility issue is rarely a problem at lakes and ponds with *Nymphaea alba*.

Donacia dentata **Hoppe, 1795**

Historical overview

There are two published records of this species from Ireland. The first, by Johnson (1888), repeated in Fowler (1890), was subsequently corrected to *D. versicolorea* in Johnson and Halbert (1902). The second record, published in Halbert (1898b), is from Kerry by Cuthbert

who found it on *Nymphaea alba* on 9 July 1898 at Lough Crincaum (the name of the lake is spelt Crimcaun in Halbert 1898b, but Crincaum is the spelling on the 1:50000 Ordnance Survey map). The NMI collection contains a correctly determined specimen bearing separate labels 'Co. Kerry' 'H.G. Cuthbert' and '80.95' which it is safe to assume is the voucher for this record. Menzies and Cox (1996) indicate it was recorded from Northern Ireland pre-1970, presumably basing this on the information in Fowler (1890).

1980 onwards

There are no published records since 1980 and we have not recorded it.

Irish distribution

Not mapped.

KERRY: Lough Crincaum, [V9382], 9 July 1898, H. G. Cuthbert, published Halbert (1898b), **NMI**.

This is one of the latest *Donacia* to appear each year. The adults appear in late June and are most numerous in late July and August (Menzies and Cox, 1996). The usual host plant is arrowhead *Sagittaria sagittifolia* L. (Menzies and Cox, 1996), but du Chatenet (2002) says it is also found on water-plantain *Alisma* spp. In Ireland, *S. sagittifolia* is generally uncommon and is distributed mainly in the Shannon, Erne, Neagh catchments (Preston *et al*., 2002). It is absent from most of the south and west including all of Kerry. *Alisma plantago-aquatica* is however very widespread in Ireland, including Kerry, although largely confined to lowland sites (Preston *et al*., 2002). None of us has visited Lough Crincaum, so we do not have personal experience of what plant species are present, but based on our experience of other lakes in the area, the site would seem unsuitable for *Alisma plantago-aquatica*. This presents a puzzle to explain this record which is so anomalous that, regardless of the existence of a voucher, it must be treated as unconfirmed. The possibility that the voucher is not the genuine specimen should be considered. One should also take into account the similar circumstances for the Crincaum record of *D. semicuprea* (q.v.), the hostplant of which is not even known from Kerry.

***Donacia impressa* Paykull, 1799**

Historical overview

Early published records are included in Stevens (1871 – Clare), Halbert (1895 – Carlow), Halbert (1896 – Galway), Halbert (1898a – Roscommon), Porter (1898 – Fermanagh), Buckle (1900) and Anon (1900 – Offaly). Johnson and Halbert (1902) considered the species to be 'locally common on boggy heaths, and lake shores, in the west of Ireland, but rare in the east.' They listed it from Donegal and Cork in addition to those already mentioned. Museum specimens support later records from Mayo and Westmeath.

1980 onwards

As well as the counties listed we have records from Cavan, Kildare, Laois, Leitrim, Meath, Monaghan and Tyrone. The map shows that this species is widespread in the Erne and Shannon systems with a few records from the Connacht lakes and the south-west.

Irish distribution

See Figure 7.

CARLOW: Borris area and Barrow valley, [S75], March 1895, J. N. Halbert, published Halbert (1895), **NMI; CAVAN:** Drumgorry Lough, H415167, 29 June 2002, B. Nelson, **UM; CLARE:** Killaloe, [R77], date unknown, published Stevens (1871); Dromore Nature Reserve, R355862, 24 May 2002, B. Nelson, **UM**; Lough Graney, R559949, 25 May 2003, S. McCormack and 13 June 2005, B. Nelson; Dromore Castle Lough, R355865, 6 July 2003, J. Walsh; **CORK:** Lakes near Glandore, [W13], date unknown, J. N. Halbert, published Johnson and Halbert (1902), **NMI**; Glengarriff, [V95], July 1924, J. N. Halbert, **NMI; DONEGAL:** site unknown, 10 May 1894, W. F. Johnson, published Johnson and Halbert (1902), **NMI**; Lough Gorman, G915667, 22 June 2001, B. Nelson, **UM; DUBLIN:** Grand Canal, Skeagh, N979300, 2 August 2004, J. Walsh; **FERMANAGH:** Upper Lough Erne, Belleisle, [H2935], 1896, published Porter (1898); Lower Lough Erne, Portora, [H2244], 27 May 1937, collector unknown, **UM**; and, same data, 30 May 1941 and 2 June 1941, **UM**; Lower Lough Erne, Carrickreagh, [H1751], 11 June 1941, collector unknown, **UM**; Killyhommon, H129459, 23 June 1988, G. N. Foster; Lough Coole, H255435, 24 June 1988, G. N. Foster; Upper Lough Erne, Crom Townland, H363243, 26 May

1992, K. N. Alexander; Upper Lough Erne, Mullynacoagh Townland, H356227, 27 May 1992, K. N. Alexander; Upper Lough Erne, Bleanish Island, H352258, 27 May 1992, A. P. Foster; Upper Lough Erne, Corraharra Townland, H353224, 27 May 1992, K. N. Alexander; Upper Lough Erne, Reilly Wood, H340251, 28 May 1992, K. N. Alexander; Upper Lough Erne, Derryvore Townland, H355237, 28 May 1992, A. P. Foster; Upper Lough Erne, Inishfendra, H372536, 28 May 1992, A. P. Foster; Upper Lough Erne, Gole Wood, H334253, 1 June 1992, K. N. Alexander; Upper Lough Erne, Derrybeg West and Derrymacrow Townlands, H368260, 4 June 1992, K. N. Alexander; Upper Lough Erne, Tiraroe, H3029, 28 June 1994, B. Nelson, **UM**; Lough Scolban, H005612, 20 June 1998, B. Nelson, **UM**; Tullynanny Lough, G979506, 19 June 2003, R. Merritt; **GALWAY:** Clonbrock, [M73], date unknown, published Halbert (1896), **NMI**; Lough Derg, [M80], date unknown, published Johnson and Halbert (1902); Lough Cutra, R485982, 24 May 2003, P. H. Langton and R485986, 25 May 2003, G. N. Foster; Lough Nahinch, M630386, 14 June 2003, R. Merritt; Summerville Lough, M601498, 14 June 2003, R. Merritt; Lough Namucka, M610725, 16 June 2003, R. Merritt; Lough Corrib, Derry Quay, M179528, 17 June 2005, B. Nelson; **KERRY:** Lough Caragh, [V79], June 1902, published Donisthorpe (1903); Ross, Killarney, [V9588], 23 September 1931, E. F. Bullock, **NMI**; Muckross, [V98], date illegible, E. F. Bullock, **NMI**; Lough Doo, V949862 and V953860, 12 June 2005, B. Nelson; **KILDARE:** Grand Canal, Bond's Bridge, N762262, 25 June 2000, J. Walsh; Grand Canal, Barrow line, N765251, 25 July 2000, J. Walsh; **LAOIS:** Barrow Canal, Vicarstown, N616005, 22 July 2005, J. Walsh; **LEITRIM:** Cloonfinnan Lough, N054948, 5 June 2002, B. Nelson; Funshinnagh Lough, H062043, 9 July 2002, B. Nelson, **UM; LIMERICK:** Lough Gur, [R6440], date unknown, **NMI**; Curraghchase Pond, R413493, 6 July 2003, J. Walsh; **MAYO:** Castlebar, [M19], June 1909, **NMI**; Belclare, [L98], July 1910, **NMI**; Westport, [L9984], July 1911, **NMI**; Cloonacurry Lough, M444812, 17 June 2003, R. Merritt; Crocknacloy Lough, M425939, 17 June 2003, R. Merritt; Lough Conn, Attiappleton, G197044, 2 July 2003, B. Nelson, **UM**; Lough Mask, Cuslough Pier, M152650, 17 June 2005, B. Nelson; **MEATH:** Boyne Canal, east of Slane, N971732, 24 June 2001, J. Walsh; **MONAGHAN:** Kilroosky Lough, H493273, 28 June 2000, B. Nelson, **UM; OFFALY:** River Shannon at

Clonmacnoise, [N03], 29 June 1899, published Anon (1900); Pallas' Lough, N270195, 16 June 2002, B. Nelson, **UM** and 31 July 2004, J. Walsh.; Lough Roe, S092942, 22 May 2003, G. N. Foster; Grand Canal, Tullamore, N345254, 31 July 2004, J. Walsh, Shannonbridge, M969256, 17 July 2006, J. Walsh; **ROSCOMMON:** Mote Park, [M86], date unknown, published Halbert (1898a), **NMI**; Lough Ree, [N04], date unknown, published Halbert (1898a); Drimmon Lough, M933871, 5 June 2002, B. Nelson, **UM**; Black Lough, M958867, 5 May 2002, B. Nelson, **UM**; Kilglass Lough, M979840, 7 July 2002, J. Walsh, Canbo Lough, M877946, 18 June 2003, R. Merritt; **TYRONE:** Cullentra Lough, H475455, 13 June 1996, B. Nelson, **UM**; Lough na Blaney Bane, H580475, 15 June 1999, B. Nelson; Fymore Lough, H595519, 13 June 2000, B. Nelson, **UM; WESTMEATH:** Ballinderry Lough, N2139, 3 July 1933, E. O'Mahony, **NMI**; Lough Analla, N596617, 31 May 2000, C. Ronayne; Ballynafid Lough, N411608, 15 July 2000, J. Walsh.

D. impressa is a medium-sized species which shows many similarities to *D. thalassina*. They are similar in size, shape and colouring and they are found in similar habitat, typically the margins of ponds and lakes with beds of sedges and similar plants. However the species are rarely taken at the same site, a pattern also noted by Menzies and Cox (1996). *Schoenoplectus lacustris* is the probable foodplant (John Bratton pers. comm.).

Identification of the two species requires care, especially females, as structural features are not diagnostic. Males can be identified simply by the aedeagal characters. Compared to *D. thalassina*, *D. impressa* has generally less prominent femoral teeth and the elytral sutures typically end in a raised keel. Also, *D. impressa* is generally slightly smaller than *D. thalassina* with a more shiny appearance.

Donacia marginata Hoppe, 1795

Historical overview

This is called under its synonym *limbata* in early literature including Johnson and Halbert (1902). There are published records for Armagh (Johnson, 1888), Louth (Anon, 1895), Dublin (Hogan, 1854), Cork (Cuthbert, 1895) and Kerry (Champion, 1901). Johnson and Halbert

(1902) also listed Wicklow and Wexford but made no comment about the abundance of this species. There are vouchers in the NMI and UM supporting records from Kerry, Kildare, Mayo, Meath, Tipperary and Westmeath collected by Halbert, Stelfox and O'Mahony between 1910 and 1950. It was recorded in Tyrone for the first time by Anderson in 1977.

1980 onwards

There have been records since 1980 from Cavan, Clare, Leitrim, Limerick, Tyrone and Waterford. The distribution is very scattered, but it shows a more easterly and southerly distribution than other species and there have been only two recent records from west of the Shannon.

Irish distribution

See Figure 8.

ARMAGH: Mullinure, [H8846], 10 June 1887, W. F. Johnson, **UM**, published Johnson (1888); [Clonmacate], [H84], 10 May 1894, W. F. Johnson, **NMI** – this specimen is simply labelled Armagh, but other specimens collected on this date (q.v. *D. versicolorea*) are from Clonmacate; **CAVAN:** Mullagh Lough, N680858, 22 July 2001, J. Walsh; **CLARE:** Carter's Lough, R559839, 25 May 2003, S. McCormack; Inchicronan Lough, R404869, 5 July 2003, J. Walsh; **CORK:** Blarney, [W67], date unknown, J. J. Walker, published Johnson and Halbert (1902); Glandore, [W23], date unknown, J. N. Halbert, published Johnson and Halbert (1902), **NMI**; Rosscarbery, [W23], August 1895, H. G. Cuthbert, published Cuthbert (1895); **DUBLIN:** details unknown, published Hogan (1854); specimen in NMI simply labelled Dublin is presumed the voucher for this record; **KERRY:** Waterville, [V56], 26 July – 8 August 1901, J. W. Yerbury, published Champion (1901), **NMI**; Derrynane, [V5358], 27 July 1934, A. W. Stelfox, **NMI; KILDARE:** Royal Canal, Louisa Bridge, [N9936], 25 June 1950, E. O'Mahony, **NMI; LEITRIM:** Cloonfinan Lough, N054948, 5 June 2002, B. Nelson, **UM**; Lough Erril, N047967, 6 July 2002, B. Nelson, **UM; LIMERICK:** Lough Gur, R642401, 16 August 2001, J. Walsh; Curraghchase Pond, R413493, 6 July 2003, J. Walsh; Mount Coote, Kilmallock, R630274, 7 July 2003, J. Walsh; **LOUTH:** Braganstown Bog, [O0394], 10 August 1895, J. N. Halbert, published Anon (1895), **NMI; MAYO:** Belclare, [L98], July 1910, J. N. Halbert,

NMI; MEATH: Royal Canal, Ferns Lock, [N8541], 6 August 1939, A. W. Stelfox, **NMI; TIPPERARY:** Ballinacourty, Aherlow, [R82], 11 June 1944, A. W. Stelfox, **NMI; TYRONE:** Roughan Lough, H827688, 22 October 1977, R. Anderson, **UM**; Loughpatrick, H507686, 19 June 1996, B. Nelson, **UM; WATERFORD:** Portlaw, S4415, 7 July 1988, J. P. O'Connor; **WESTMEATH:** Ballinderry Lough, N2139, 3 July 1933, E. O'Mahony, **NMI; WEXFORD:** site and date unknown, J. N. Halbert, published Johnson and Halbert (1902), **NMI; WICKLOW:** \ Arklow, [T27], date unknown, A. R. Furlong, published Johnson and Halbert (1902).

This is a distinctive species on account of the conspicuous patches of purple on the sides and base of the eltyra. The ground colour of the head, thorax and elytra is golden-bronze. *D. marginata* is a robust reed beetle, close in size and shape to *D. bicolora* and *D. obscura*. Its host plant is *Sparganium erectum*, which is shared with *D. bicolora*, but the two species have only been recorded together at two sites, Mullagh Lough (Cavan) and Inchicronan Lough (Clare). Menzies and Cox (1996) state that *D. marginata* is often found in 'large numbers', but in our experience most sites only produce small numbers, in contrast with *D. bicolora*. Most of the records have been from small, still water (small lakes and canals) again in contrast to *D. bicolora* which is common in large lakes and rivers. The distribution is strikingly different from *bicolora*, in particular the absence of this species from the upper parts of the Shannon and the Erne lakes.

Donacia obscura Gyllenhal, 1813

Historical overview

Published records of this species appear in Champion (1901) and Johnson and Halbert (1902). It was taken by Yerbury at Glengarriff (Cork) (Champion 1901) and Halbert recorded it in May 1901 from Lough Drin and Lough Ennell, near Mullingar (Westmeath) (Johnson and Halbert, 1902). In the NMI and UM collections there are vouchers for unpublished records from Armagh, Kerry, Laois and Westmeath between 1890 and 1937. It is puzzling why Johnson's 1890 record was never published in any of his notes or in the 1902 beetle list.

1980 onwards

We have records from Antrim, Armagh, Cavan, Clare, Donegal, Fermanagh, Galway (Bilton and Lott, 1991), Leitrim, Londonderry, Mayo, Offaly, Tyrone and Westmeath. This distribution appears extensive but the number of known sites is fewer than 20. In our experience this is an uncommon species, rarely found in large numbers.

Irish distribution

See Figure 9.

ANTRIM: Inver River, Crockravar, D222190, 21 June 1995, B. Nelson, **UM** and same site, 27 June 1999, R. Anderson; **ARMAGH**: Lough Neagh, Maghery, [H9263], 4 August 1890, W. F. Johnson, **UM**; Brackagh Moss, J0251, 17 June 1996, B. Nelson, **UM; CAVAN:** Drumeague Lough Upper, H665022, 28 June 2001, B. Nelson; **CLARE:** Lough Atorick, R629963, 23 May 2003, G. N. Foster; Lough Derg, Scarriff Pier, R660841, 13 June 2005, B. Nelson; Lough Graney, R559949, 25 May 2003, S. McCormack; **CORK:** Glengarriff, [V95], July 1901, J. W. Yerbury, published Champion (1901); Coomerkane, V883557, 12 June 2002, B. Nelson; **DONEGAL:** Lough Gorman, G915667, 22 June 2001, B. Nelson, **UM; FERMANAGH:** Lough Cushkeery, H486399, 17 June 1999, B. Nelson, **UM**; Lower Lough Erne, Lowerybane Townland, G995589, July 2000, B. Nelson, **UM**; Tullyvocady Lough, H058646, 22 June 2001, B. Nelson, **UM; GALWAY:** Moycullen, [M2133], 1 June 1905, J. N. Halbert, **NMI**; Toombeola, L7345, June 1989, D. T. Bilton, published Bilton and Lott (1991); **KERRY:** Muckross, [V98], May 1937, E. F. Bullock, **NMI; LAOIS:** Abbeyleix, [S48], 17 May 1926, R. A. Phillips, **NMI; LEITRIM:** Lough Erril, N047967, 9 July 2002, B. Nelson, **UM; LONDONDERRY:** Bran Lough, C834034, 10 June 2001, R. Anderson; **MAYO:** Knocklahard, M189644, 18 June 2005, B. Nelson; **OFFALY:** Lough Roe, S092942, 22 May 2003, G. N. Foster; **TYRONE:** Cullentra Lough, H476475, 13 June 1996, B. Nelson, **UM** and same site, 14 June 2000, B. Nelson, **UM; WESTMEATH:** Lough Drin, [N4556], May 1901, J. N. Halbert, published Johnson and Halbert (1902), **NMI**; Lough Ennell, [N44], May 1901, J. N. Halbert, published Johnson and Halbert (1902), **NMI**; Mullingar, [N45], 5 June 1904, S. W. Kemp, **NMI**; Ballynafid Lough, N4160, 25 May 2003, B Nelson.

Donacia obscura is one of the larger species and similar in size, shape and form to *D. bicolora*. The colour is a uniform gunmetal bronze lacking the brilliance and warmth of *D. bicolora*. There appears to be little variation in colouring of individuals we have collected. The Irish records have all been in May and June except for single records in both July and August. Most of the specimens have been found by sweeping large sedge beds on the shores of lakes, occasionally rivers. There is no information on host plant in Ireland, but club-rushes and large sedges are mentioned by Menzies and Cox (1996) and *Carex paniculata*, *Carex rostrata*, *Scirpus* and *Schoenoplectus* by du Chatenet (2002).

***Donacia semicuprea* Panzer, 1796**

Historical overview

There are two published records of this species. The first from Armagh, in Johnson (1892), was an error which was corrected to *D. simplex* in Johnson and Halbert (1902) although not before it was repeated in Fowler (1890). The second record in Halbert (1898b) refers to two taken at Crincaum Lough, Kerry by Cuthbert. Halbert stated these were the first he had seen and that the species appeared rare in Ireland. In Johnson and Halbert (1902) it is stated the specimens were taken off *Nymphaea alba.* There is a specimen in the NMI labelled Co. Kerry, but with no other data which is presumably the voucher for this record. There is also a second specimen in the NMI collected by Bullock at Dundrum, Co. Dublin in either 1917 or 1919 (the writing on the label is unclear).

The map in Menzies and Cox (1996) incorrectly shows that the species has been recorded in Northern Ireland before and after 1970. The early record is the erroneous Johnson report, the latter is also erroneous based on a incorrectly determined specimen of *D. versicolorea* collected by Roy Anderson.

1980 onwards

There are no published records from this period and we have never taken the species.

Irish distribution

See Figure 10.

KERRY: Lough Crincaum, [V9382], 9 July 1898, H. K. G. Cuthbert, published Halbert (1898b); the **NMI** specimen simply labelled 'Co. Kerry' is presumed to be the voucher for this record; **DUBLIN:** Dundrum, [O12], [label unclear 1917 or 1919], E. F. Bullock, **NMI**.

This is clearly one of the rarer Irish species. The record from Lough Crincaum is the third remarkable record from this site (see *Donacia dentata* and *Plateumaris bracata*). The host plant of *D. semicuprea* is *Glyceria maxima* (Menzies and Cox, 1996, Warchałowski 2003) which is totally absent from Kerry (Preston *et al*., 2002). However, du Chatenet (2002) mentions *Sparganium* also. We can offer no explanation for this anomalous situation which has uncomfortable parallels with the case of *D. dentata* from the same site, but we consider this record to be unsafe, and hence it is not mapped.

Donacia simplex Fabricius, 1775

Historical overview

Common according to Johnson and Halbert (1902) which listed it from Armagh, Clare, Cork, Down, Dublin, Fermanagh, Galway, Kerry, Kilkenny, Limerick, Waterford, Westmeath and Wexford but gave no specific localites. We have traced vouchers for some but not all of these counties as well as Kildare, Mayo and Sligo.

1980 onwards

We have recorded this species in many of the counties already mentioned and also from Antrim, Cavan, Laois, Meath, Roscommon and Tyrone.

Irish distribution

See Figure 11.

ANTRIM: Portmore Lough, J1068, 14 June 1999, B. Nelson, **UM; ARMAGH:** Armagh, [H84], 21 May 1886, W. F. Johnson, **UM**; Churchill, [H8961], 2 July 1887, W. F. Johnson, **UM**; Poyntzpass, [J0539], 9 June 1906, W. F. Johnson, **UM**; Poyntzpass, [J0539], 21 May 1908, W. F. Johnson, **UM**; Portadown, [J05], 18 May 1935, WM Crawford, **UM**; Lough Neagh, Ardmore Point, J0264, 18 June 1977, R. Anderson, **UM**; Lough Neagh, Derrywarragh Island, H922643, 26 June 1996, R. Anderson; **CAVAN:** Lough Ramor, N594870, 17 June 2000, J.

Walsh; Dromore River, H646164, 27 June 2001, B. Nelson, **UM**; Mullagh Lough, N680858, 22 July 2001, J. Walsh; Clonty Lough, H274124, 11 July 2002, B. Nelson, **NMI; CORK:** Doneraile Nat. Park, R606074, 7 July 2003, J. Walsh; **DOWN:** Lough Neagh, Ellis's Gut, [J0862], 7 July 1934, W. M. Crawford, **UM**; Castleward, J575503, 24 June 1992, A. P. Foster; Hillsborough Forest North, J249585, 20 June 1995, R. Anderson; **DUBLIN:** Dublin, [O13], 10 December 1893, J. N. Halbert, **NMI**; Dublin, [O13], 1897, J. N. Halbert, **NMI**; Kilbarrack, [O23], 5 June 1926, E. O'Mahony, **NMI; FERMANAGH:** Lough Coole, H255435, 24 June 1988, G. N. Foster; Upper Lough Erne, Crom Townland, H359248, 26 May 1992, A. P. Foster; Upper Lough Erne, Inisherk Island, H358243, 26 May 1992, A. P. Foster; Upper Lough Erne, Inishfendra, H370237, 28 May 1992, A. P. Foster; Lough Coole, H2543, 2 June 1992, A. P. Foster; Upper Lough Erne, Derrykerrib Townland, H418208, June 1999, B. Nelson, **UM**; Upper Lough Erne, Ring Townland, H237392, June 1999, B. Nelson, **UM**; Upper Lough Erne, Coolbeg Townland, H304342, 17 June 1999, B. Nelson, **UM**; Tullyvocady Lough, H058646, 22 June 2001, B. Nelson, **UM**; Lough Alaban, H070438, 25 June 2003, B. Nelson, **UM**; Lough Navadogue, H485411, 25 June 2003, B. Nelson, **UM; GALWAY:** River Corrib, Galway, M282280, 30 May 2003, S. McCormack; Lough Rea, M610163, 5 July 2003, J. Walsh; Lough Corrib, Derry Quay, M179528, 17 June 2005, B. Nelson; **KERRY:** Glencar, [V78], June 1902, **NMI**; Muckross, Killarney, [V98], June 1907, E. F. Bullock, **NMI**; Killarney, [V99], June 1915, E. F. Bullock, **NMI**; Killarney, [V99], June 1916, E. F. Bullock, **NMI**; Killarney, lough shore, [V99], 14 July 1928, E. F. Bullock, **NMI; KILDARE:** Leixlip, [N93], 18 May 1928, A. W. Stelfox, **NMI**; Rye Water, Leixlip, [N93], 7 June 1940, A. W. Stelfox, **NMI**; Leixlip, [N93], 9 July 1941, A. W. Stelfox, **NMI**; Kingsbog, N7108, 16 June 1998, C. Ronayne; **LAOIS:** Ballyfin Lough, N382003, 31 July 2004, J. Walsh; **LIMERICK:** Limerick, [R55], 1904, J. N. Halbert, **NMI**; Lough Gur, [R64], 1904, **NMI**; Lough Gur, R642401, 28 July 2000, J. Walsh; Curraghchase Pond, R413493, 6 July 2003, J. Walsh; Mount Coote, Kilmallock, R630274, 7 July 2003, J. Walsh; **LOUTH:** Stephenstown Pond, J012027, 13 August 2000, J. Walsh; **MAYO:** Westport, [L98], June 1909, J. N. Halbert, **NMI**; Belclare, [L98], July 1910, J. N. Halbert, **NMI**; Lough Carra, Partry House, M166692, 2 July 2003, B. Nelson, **UM**; Lough

Mask, Cuslough Pier, M152650, 17 June 2005, B. Nelson, **UM; MEATH:** River Boyne, west of Slane Bridge, N961739, 24 June 2001, J. Walsh; **ROSCOMMON:** Lowfield Lough, M993947, 5 June 2002, B. Nelson, **UM; SLIGO:** Rosses Point, [G64], June 1905, W. F. Johnson, **UM**; Mullaghmore, [G7158], 20 June 1937, unknown, **UM**; Cliffony, [G7053], 22 June 1946, unknown, **UM; TYRONE:** Maghera Lough, H300577, 19 June 1996, B. Nelson, **UM; WATERFORD:** Lismore, [X09], 7 July 1894, J. N. Halbert, **NMI**; Cappoquin, [X19], 1900, J. N. Halbert, **NMI; WESTMEATH:** Derravaragh Lough, [N46], 1901, J. N. Halbert, **NMI**; Ballyhealy, 26 May 1940, [N6260], A. W. Stelfox, **NMI**; Lough Patrick, N4363, August 1986, D. T. Bilton, published Bilton (1988); Royal Canal Supply, N4454, August 1986, D. T. Bilton, published Bilton (1988), **NMI**; River Inny, upstream Lough Derravaragh, N387699, 15 July 2000, J. Walsh; **WEXFORD:** Wexford, [T02], July 1902, J. J. F. X. King, Hunterian Museum, Glasgow.

This is a widespread species in Ireland. It is found by lakes, ponds and occasionally rivers. The host-plants are species of *Sparganium*. In Britain, it is considered one of the commonest species, but in Ireland it would seem to be less abundant than *D. bicolora* and *D. thalassina*.

***Donacia sparganii* Ahrens, 1810**

Historical overview

This species is not mentioned in any Irish literature we have traced. Four specimens of *D. sparganii* were found by BN whilst browsing through the *Donacia* specimens in the Liverpool Museum collections in 2005. These came from the collection of Richard Wilding (1858-1949), a prominent Lancastrian entomologist, which was purchased by Liverpool Museum on his death (Harwood, 1950). Wilding's collection contained some 10,000 specimens, including specimens collected by many prominent British and Irish coleopterists including Bullock (Guy Knight pers. comm.). The *sparganii* specimens are card mounted, two on each mount, the card being cut from a printed invitation or ticket for a tennis tournament. Each has a green label with 'Killarney; EF Bullock' in Bullock's handwriting (although larger and more easily legible than is typical on Bullock specimens) but there is no date information. Both mounts have

determination labels by P. J. Hodge, 1994. Bullock's material in the NMI, Dublin has been examined for further *sparganii* specimens, but none have been found.

1980 onwards

We have never collected this species nor are we aware of any published records.

Irish distribution

See Figure 12.

KERRY: Killarney, [V98], date unknown, EF Bullock, Liverpool Museum.

This was a surprising and unexpected addition to the Irish fauna. Whether Bullock ever determined them is unclear and how they came to be in Wilding's collection is unknown. There is nothing about the specimens which suggests they are not genuinely what they purport to be, but the possibility of a labelling error should also be considered. The card used for the mount could perhaps give a clue if others with the same card are found. However, it is apparent that Bullock often collected specimens which resided in his collection without notice as to their significance (for example records of *Plateumaris bracata* and the dragonfly *Cordulia aenea* (Nelson and Thompson, 2003)). The record is therefore considered acceptable until evidence is found suggesting otherwise.

In Britain this is considered one of the rarer species although it can be frequent at known sites (Menzies and Cox, 1996). Historically the species has been found in the southern half of Britain as far north as Lancashire and Yorkshire but with recent records confined to a few sites in the midlands and southern England. One of the Welsh records (for Caenarvonshire, v.c. 49) given in Menzies and Cox (1996) is incorrect and the other (for Carmathenshire) cannot be traced (John Bratton pers. comm.). As its specific name indicates, its host plant is *Sparganium* species. The precise species of *Sparganium* is not mentioned in Menzies and Cox (1996), but the reference to floating leaves implies *Sparganium emersum* rather than *Sparganium erectum*, the host plant of *D. bicolora* and *D. marginata*. *Sparganium emersum* grows in deeper water than *S. erectum* and has floating leaves. According to Menzies and Cox (1996), *sparganii* is 'most likely to be seen (with the aid of binoculars) resting, out of reach, on the floating leaves of *Sparganium* trailing in the current of streams and rivers. The adults appear during July and

August, after the *Sparganium* leaves have grown sufficiently to reach the surface of the deeper water.' This habit of the host plant corresponds to *S. emersum* and also indicates that the species could easily be missed if not specifically searched for. *Sparganium emersum* and *Butomus umbellatus* are given as host plants by du Chatenet (2002). John Bratton (pers. comm.) informs us that on a sluggish stretch of the River Nene near Peterborough (England), *D. sparganii* was most strongly associated with *Sparganium emersum*, regularly being found on the floating leaves. The adults could also be found in the flowers of *Nuphar lutea.* Adults appeared on the Nene in July (earliest date 4 July 1992, but much later in some years) and were present throughout August.

***Donacia thalassina* Germar, 1811**

Historical overview

Johnson and Halbert (1902) considered the species as 'not uncommon; probably overlooked in many localities'. There are published records in Stevens (1871 – Clare), Buckle (1900 – Foyle district) and Halbert (1900 – Dublin). To this list, Johnson and Halbert (1902) added Galway, Kerry, Limerick, Westmeath and Wexford. Voucher specimens supporting records from Antrim, Armagh, Donegal, Londonderry and Mayo were found in the collections examined.

1980 onwards

This has been recorded from many sites in Fermanagh plus Cavan, Kildare, Leitrim, Monaghan, Roscommon, Sligo and Tyrone.

Irish distribution

See Figure 13.

ANTRIM: Lough Neagh, Rea's Wood, J1485, 30 May 1973, A. Irwin, **UM**; Portmore Lough, J1068, 2 July 1999, B. Nelson, **UM**; Montiaghs Moss, J093654, 23 June 2001, B. Nelson, **UM;** **ARMAGH:** Lough Neagh, Ardmore Point, J024640, 18 May 1977, R. Anderson, **UM**; Lurgan Lough Upper, H950157 and H951156, 15 June 1997, B. Nelson, **UM**; Loughaveely, H954141, 15 June 1997, B. Nelson, **UM**; Jointy's Lough, H827297, 25 June 1999, B. Nelson, **UM**; Acton

Lake, J064414, 18 June 2001, B. Nelson, **UM**; Derryadd Lough, H9160, 23 June 2001, B. Nelson; **CAVAN:** Lough Ramor, N594870, 25 June 2000, J. Walsh; Lough Oughter, Trinity Island, H351042, 11 July 2002, B. Nelson, **UM**; Killybandrick Lough, H419168, 28 June 2001, B. Nelson, **UM**; Lough Sheelin, Crover, N472862, 28 June 2001, B. Nelson, **UM**; Lough Sheelin, Kilnahard, N430855, 28 June 2001, B. Nelson, **UM**; Drumgorry Lough, H415167, 29 June 2002, B. Nelson, **UM; CLARE:** Killaloe, [R77], date unknown, published Stevens (1871); Lough Graney, R559948, 26 May 2002, B. Nelson, **UM**; Kilgory Lough, R539783, 13 June 2002, B. Nelson, **NMI** and **UM**; Lough Graney, R555947, 25 May 2003, G. N. Foster, S. McCormack, A. O'Connor and M. N. Smith; Lough Graney, R558948, 13 June 2005, B. Nelson; **DONEGAL:** Bundoran, [G8158], 28 June 1941, collector unknown, **UM**; Kiltooris Lough, G684965, 14 July 1995, B. Nelson, **UM** and same site, G679964, 28 July 1999, B. Nelson, **UM**; Sheskinmore Lough, G703951, 16 July 2000, B. Nelson, **UM**; Lough Ea, G9195, 17 July 2000, B. Nelson, **UM**; Sandfield Lake, G708951, 14 July 2002, B. Nelson, **NMI; DUBLIN:** Royal Canal, Dublin, [O03], 1897, J. N. Halbert, published Halbert (1900), **NMI; FERMANAGH:** Lough Achork, H044555, 22 June 1988, G. N. Foster; Upper Lough Erne, Crom Townland, H359247, 26 May 1992, A. P. Foster; Upper Lough Erne, Crom Townland, H363237, 26 May 1992, K. N. Alexander; Upper Lough Erne, Dernish Island, H345246, 27 May 1992, A. P. Foster; Upper Lough Erne, Bleanish Island, H354258, 27 May 1992, A. P. Foster; Upper Lough Erne, Mullynacoagh Townland, H356227, 27 May 1992, K. N. Alexander; Upper Lough Erne, Reilly Wood, H340251, 28 May 1992, K. N. Alexander; Upper Lough Erne, Gole Wood, H334253, 1 June 1992, K. N. Alexander; Lower Lough Erne, Camagh Bay, H160537, 21 June 1995, B. Nelson, **UM** and H161537, 15 June 1996, B. Nelson, **UM**; Upper Lough Erne, Inishmore, H2836, 20 July 1994, B. Nelson, **UM**; Lough Melvin, Garvros, G932532, 14 June 1995, B. Nelson, **UM**; Coolyermer Lough, H181424, 25 June 1996, B. Nelson and 25 June 1998, B Nelson, **NMI**; Upper Lough Erne, Knockninny, H284310, 16 June 1998, B. Nelson, **UM**; Lower Lough Erne, Inishmacsaint, H165541, 19 June 1998, B. Nelson, **UM**; Upper Lough Erne, Knockninny, H284310, 19 June 1998, B. Nelson; Lough Scolban, H005612, 20 June 1998, B Nelson, **UM**; Legalough, H0834, 10 June 1999, B. Nelson, **UM**;

Upper Lough Erne, Inishcreenry, H298337, 17 June 1999, B. Nelson, **UM**; Corranny Lough, H478332, 17 June 1999, B. Nelson, **UM**; Lough Cushkeery, H486399, 17 June 1999, B. Nelson, **UM**; Lough Aleen, H1354, 24 June 1999, B. Nelson, **UM**; Upper Lough Erne, Galloon Island, H383215, 1 July 1999, B. Nelson, **UM**; Lough Corry, H465363, 1 July 1999, B. Nelson, **UM**; Lough Vearty, G992653, 22 June 2001, B. Nelson, **UM**; Upper Lough Erne, Corradillar, H332281, 7 August 2005, B. Nelson; **GALWAY:** Clonbrock, [M73], date unknown, R. E. Dillon, published Johnson and Halbert 1902; Lough Cutra, R486987, 25 May 2003, T. van Haaren; Lough Rea, M610163, 5 July 2003, J. Walsh and M611163, 13 June 2005, B. Nelson; Lough Corrib, Angliham, M290302, 26 May 2004, B. Nelson, **UM; KERRY:** Caragh Lake, [V79], J. W. Yerbury, published Johnson and Halbert 1902; Killarney, [V98], June 1912, E. F. Bullock, **NMI**; Cahernane, Killarney, [V98], July 1933, E. F. Bullock, **NMI**; Flesk, Killarney, [V98], July 1933, E. F. Bullock, **NMI**; Lough Gill, Q606145 and Q614140, 22 July 1998, B. Nelson**, NMI**; Lough Beg, V893812, 11 June 2005, B. Nelson, **UM**; Lough Doo, V949862, 12 June 2005, B. Nelson; **KILDARE:** Grand Canal, Bond's Bridge, N762262, 25 July 2000, J. Walsh; **LEITRIM:** Cloonfinnan Lough, N054948, 5 June 2002, B. Nelson; Gortinty Lough, N020958, 7 July 2002, J. Walsh; Lough Erril, N047967, 9 July 2002, B. Nelson, **UM; LIMERICK:** Lough Gur, [R64], date unknown, J. N. Halbert, published Johnson and Halbert 1902, **NMI; LONDONDERRY:** Toome, [H99], 1902, collector unknown, **NMI; MAYO:** Clare Island, [L68], 8 June 1909, **NMI**; Roonah, Louisburgh, [L77], [1910], collector unknown, **NMI**; Lough Mask, Inishard, M126597, 1 July 2003, B. Nelson, **UM**; Lough Conn, Attiappleton, G197044, 2 July 2003, B. Nelson, **UM; MONAGHAN:** Smith's Lake, H832186, 14 June 1996, B. Nelson, **UM**; Greagh Lough, H6427, 27 June 2001, B. Nelson, **UM**; Corravoo Lough, H656183, 27 June 2001, B. Nelson, **UM; ROSCOMMON:** Lough Gara, south of Clooncurry Bridge, M713977, 6 July 2002, J. Walsh; Kilglass Lough, M979840, 7 July 2002, J. Walsh; **SLIGO:** Bunduff Lough, G7155, 6 June 1998, B. Nelson, **NMI** and **UM; TYRONE:** Maghera Lough, H300577, 19 June 1996, B. Nelson, **UM**; Lough na Blaney Bane, H580475, 15 June 1999, B. Nelson; Limestone Lake, H078799, 29 June 1999 B. Nelson, **UM**; Lough Fadda, H448484, 14 June 2000 B. Nelson; Cullentra Lough, H4747, 14 June 2000, B. Nelson, **UM**;

White Lough, H705525, 25 June 2003, B. Nelson, **UM**; Black Lough, H7153, 25 June 2003, B. Nelson, **UM; WESTMEATH:** Lough Ennell, [N34], date unknown, J. N. Halbert, published Johnson and Halbert 1902; Lough Ennell, Blind Island, N410465, 23 May 2003, B. Nelson, **UM; WEXFORD:** River Slaney, Killurin, [S92], [9 July 1900], J. N. Halbert, published Johnson and Halbert (1902), **NMI**; River Slaney, Enniscorthy, [S93], date unknown, J. N. Halbert, published Johnson and Halbert 1902.

Donacia thalassina is typically found in abundance in beds of small sedges *Carex* spp. and spike-rushes *Eleocharis* spp. at the edges of lakes and ponds. It is often the only species present on stony exposed shores. The distribution is extensive especially in the north-west where it is easily the commonest species. This general abundance here is in contrast to the more local nature of its distribution in Britain. *Eleocharis palustris* would appear to be the main foodplant.

***Donacia versicolorea* (Brahm, 1791)**

Historical overview

There are published records in Wollaston (1847), Hogan (1854), Cuthbert (1892), Johnson (1895), Halbert (1900), Champion (1901), Johnson and Halbert (1902), Donisthorpe (1903) and Halbert (1904). It was described by Johnson and Halbert (1902) as local. They listed records from Donegal, Lough Neagh, Armagh, Fermanagh, Sligo, Dublin, Wicklow, Wexford, Clare, Cork and Kerry. However, it is clear from Johnson (1895) that the Templenew locality which is stated to be in Fermanagh in Johnson and Halbert (1902), is actually in Donegal. There are voucher specimens in the NMI and UM supporting records from Dublin, Londonderry and Mayo.

1980 onwards

There are records from Antrim, Donegal, Galway, Kildare, Longford, Mayo, Waterford, Wexford and Wicklow. A record from Westmeath is published in Bilton (1988). The distribution in Ireland is extensive including large offshore islands. Most of the records are from localities near the coast, but there would appear no reason for this as its host plants are not similarly restricted. It is likely to be under-recorded as it is a late summer species and not

usually found on richer waters typical of the majority of *Donacia* species.

Irish distribution

See Figure 14.

ANTRIM: Loughaltachuile, D143522, 26 July 1997, B. Nelson, **UM; ARMAGH:** Clonmacate, [H9461], 10 May 1894, W. F. Johnson, published Johnson and Halbert (1902), **NMI**; Navan Fort, [H8445], 22 September 1896, R. J. Welch, published Johnson and Halbert (1902), **NMI; CLARE:** Corofin, [R38], date unknown, P. H. Grierson, published Johnson and Halbert (1902); Lahinch, [R08], date unknown, P. H. Grierson, **NMI; CORK:** no collection information, A. W. Furlong manuscript list, published Johnson and Halbert (1902); **DONEGAL:** Templenew, [G9159], July 1894, W. F. Johnson, published Johnson (1895); Milford, [C12], date unknown, J. A. Osborne, published Johnson and Halbert (1902); Kiltooris Lough, G679964, 28 July 1999, B. Nelson, **UM**; Killyfanned Lough, G5788, 21 July 2000 and 3 August 2002, B. Nelson; Lough O'Muilligan, G560755, 28 July 2000, B. Nelson; Magheramore dunes, G685951, 27 August 2002, B. Nelson; ouflowing stream from Sheskinmore Lough, G699948, 16 July 2000, B. Nelson; **DOWN:** Glastry Clay Pits, J638630, 2 September 1991, G. N. Foster; **DUBLIN:** Glasnevin Gardens, [O13], date unknown, published Hogan (1854); Raheny Ponds, [O23], date unknown, published Halbert (1900); Terenure, [O12], date unknown, JM Browne, published Johnson and Halbert (1902); Collierstown, [O0131], 3 September 1947, A. W. Stelfox, **NMI**; Royal Canal, O025368, 29 July 2006, J. Walsh; **GALWAY:** Dooagh Marsh, L742689, 22 August 2001, R. Anderson; **KERRY:** Killarney, [V99], date unknown, published T. V. Wollaston (1847); Glencar, [V78], June 1902, F. Bouskell, published Donisthorpe (1903); Waterville, [V56], 26 July - 8 August 1901, J. W. Yerbury, published Champion (1901); Killarney, [V99], July 1914, E. F. Bullock, **NMI**; Ballast pit, Killarney, [V968916], August 1930, E. F. Bullock, **NMI**, and same site, July 1933, E. F. Bullock, **NMI**; Ardagh, [V99], August 1938, E. F. Bullock, **NMI; KILDARE:** Grand Canal, Milltown Feeder, N757180, 24 June 2000, J. Walsh; **LONDONDERRY:** Creagh Bog, H984925, 22 September 1973, R. Anderson, **UM; LONGFORD:** Fortwilliam Turlough, N0162, 13 September 2002, B. Nelson; **MAYO:** Louisburgh district, [L77], July 1909, J. N.

Halbert, **NMI**; Castlebar, [M19], July 1911, **NMI**; Lough Conn, Knockmore Bay, G228081, 9 August 1999, B. Nelson, **UM**; Lough Leinapollbraty, L691856, Clare Island, 22 August 2002, S. McCormack, **NMI; SLIGO:** Lough Gill, [G73], 1 July 1904, J. N. Halbert, published Halbert (1904); **WATERFORD:** Monaneea Lough, X218846, 18 July 2000, 19 July 2000 and 30 September 2000, J. Walsh; Belle Lake, S666048, 25 July 2000, J. Walsh; Carrickavantry Resevoir, S549025, 25 July 2000, J. Walsh; **WESTMEATH:** Royal Canal, Saunders Bridge, N4553, 7 August 1986, D. T. Bilton, published Bilton (1988), **NMI; WEXFORD:** Courtown, [T25], August 1892, H. G. Cuthbert, published Cuthbert (1892); The Raven, T113230, 14 August 2003, B. Nelson, **UM; WICKLOW:** Arklow, [T27], date unknown, A. W. Furlong, published Johnson and Halbert (1902); Dundran, A. W. Furlong, date unknown, published Johnson and Halbert (1902); near Blessington, marsh by River Liffey, [N91], J. N. Halbert, published Halbert (1900); Upper Lake, Glendalough, T096962, 16 August 2002, B. Nelson.

This is the latest species of *Donacia* to emerge each year. The Irish records are in the period 16 July to 30 September with the exception of one which is labelled 10 May. The host plants of *D. versicolorea* are species of *Potamogeton. Potamogeton natans* and *P. polygonifolius* are confirmed foodplants (Bratton, 2001; Menzies and Cox, 1996), but we have no information on host plant usage in Ireland. The adults have been found sitting on the large floating leaved *Potamogeton* species.

The Irish sites are mainly small pools and sheltered bays of lakes in dune systems, coastal heaths and western blanket bog. They typically appear oligotrophic or mesotrophic in character often with peat-stained water. It has been recorded from a turlough in Longford and a shallow pond in the sand dunes of the Raven (Wexford). Many of the known sites are quite exposed and close to the sea, including ponds on Clare Island (Mayo) and Rathlin Island (Antrim).

Identification of *D. versicolorea* is relatively straightforward although it has a superficial resemblance to *D. crassipes* and it has been confused with *D. dentata* in collections (John Bratton pers. comm.). However, *versicolorea* is smaller and is noticeably more sluggish in behaviour than *crassipes*. When disturbed, the adults of *crassipes* typically fly away, whereas *versicolorea* adults walk slowly away, often moving to the underside of a leaf.

***Donacia vulgaris* Zschach, 1788**

Historical overview

There are published records from Armagh (Johnson 1892), Down (Johnson 1900), Dublin (Halbert 1900) and Antrim and Westmeath (Johnson and Halbert 1902). It was considered local by Johnson and Halbert (1902) and 'usually found singly'. There are several specimens of *vulgaris* collected by Bullock around Killarney, Kerry in the NMI, Dublin along with Halbert specimens from sites in Limerick and Mayo.

1980 onwards

We have recorded this from Cavan, Clare, Donegal, Down, Fermanagh, Galway, Laois, Leitrim, Limerick, Longford, Offaly, Sligo, Tyrone and Waterford. The distribution of the species is clearly much wider than indicated by the old records.

Irish distribution

See Figure 15.

ANTRIM: River Lagan near Moira, [J16], 29 June 1901, C. W. Buckle, published Johnson and Halbert (1902), **NMI** (labelled Belfast); Soldierstown, [J1562], 12 June 1937, W. M. Crawford, **UM**; Mossley Dam, J321849, 17 June 2006, B. Nelson, **UM; ARMAGH:** Armagh, [H84], 21 May 1886, W. F. Johnson, **UM**; Lowry's Lough, [H9144], 23 June 1887, W. F. Johnson, published Johnson and Halbert (1902), **UM** and same site 23 May 1895, W. F. Johnson, published Johnson and Halbert (1902), **UM**; Armagh, [H84], 27 September 1890, W. F. Johnson, **UM**; [Clonmacate], [H9461], 10 May 1894, W. F. Johnson, **NMI**; Armagh, [H84], 23 May 1894, W. F. Johnson, **UM**; Drumlougher Lough, H895187, 13 June 1996, B. Nelson, **UM**; Brackagh Moss, J0251, 17 June 1996, B. Nelson, **UM**; Derryadd Lough, H9160, 23 June 1999, B. Nelson and same site, 23 June 2001, B. Nelson, **UM**; Straghans Lough, H8230, 25 June 1999, B. Nelson, **UM; CAVAN:** Drumeague Lough Upper, H665022, 28 June 2001, B. Nelson, **UM**; Lough Sheelin, Kilnahard, N430855, 28 June 2001, B. Nelson, **UM**; Mullagh Lough, N680858, 22 July 2001, J. Walsh; **CLARE:** Kilgory Lough, R538786, 6 June 2006, B. Nelson, **UM; DONEGAL:** Kiltooris Lough, G679964, 28 July 1999, B. Nelson, **UM**; Magheramore

dunes, G685951, 27 August 2002, B. Nelson; **DOWN:** Strandtown, [J37], 1900, W. H. Patterson, published Johnson (1900); Lough Aghery, J2953, 10 June 1996, B. Nelson, **UM; DUBLIN:** Crumlin quarries, [O13], date unknown, J. N. Halbert, published Halbert (1900); Raheny ponds, [O23], date unknown, J. N. Halbert, published Halbert (1900); Royal Canal, Dublin, [O03], date unknown, J. N. Halbert, published Halbert (1900); Kilbarrack, [O2136], 5 June 1926, E. O'Mahony, **NMI; FERMANAGH:** Lough Coole, H2543, 2 June 1992, A. P. Foster; Upper Lough Erne, Drummee/Slee Townland, H2836, 20 July 1994, B Nelson, **UM**; Upper Lough Erne, Inishmore, H2836, 20 July 1994, B. Nelson; Upper Lough Erne, Coolbeg Townland, H304342, 17 June 1999, B. Nelson, **UM**; Upper Lough Erne, Inishcreenry, H298337, 17 June 1999, B. Nelson; Doagh Lough, H077522, 27 June 1999, B. Nelson, **UM; GALWAY:** Lough Corrib, Park, M255392, 7 August 2006, B. Nelson, **UM; KERRY:** Killarney, [V99], July 1914, E. F. Bullock, **NMI**; Ardagh, [V98], June 1931, E. F. Bullock, **NMI; LAOIS:** Ballyfin Lough, N382003, 31 July 2004, J. Walsh; **LEITRIM:** Lough Erril, N047967, 9 July 2002, B. Nelson, **UM; LIMERICK:** Lough Gur, [R6440], 1904, J. N. Halbert, **NMI**; Lough Gur, R627414, 7 August 1981, J. P. O'Connor, **NMI**; Curraghchase Pond, R413493, 6 July 2003, J. Walsh; **LONGFORD:** Derrymacar Lough, N087583, 10 July 2002, B. Nelson, **UM; MAYO:** North-east Achill Island, [F70], 1909, J. N. Halbert, **NMI**; Louisburgh, [L7579], 1910, J. N. Halbert, **NMI**; Westport, [L98], June 1909, J. N. Halbert, **NMI**; Clare Island, Poirtinfunninch Lough, L707857, 16 May 2003, S. McCormack; **OFFALY:** Charleville fen, N316227, 24 May 2003, R. Anderson; **SLIGO:** Lough Arrow, Bellarush Bridge, G770155, 6 August 2003, B. Nelson, **UM; TYRONE:** Cullentra Lough, H476475, 13 June 1996, B Nelson, **UM**; Fymore Lough, H595519, 13 June 2000, B. Nelson, **UM; WATERFORD:** Belle Lake, S666048, 25 July 2000, J. Walsh; Fenor Bog, S529012, 28 June 2003, B. Nelson, **UM**; Ballinlough, S449033, 15 July 2004, G. N. Foster, **NMI; WESTMEATH:** Derravaragh Lough, [N46], May 1901, J. N. Halbert, published Johnson and Halbert (1902), **NMI**.

This is one of the smaller *Donacia* with a slim and elongate build similar to *D. aquatica* and *D. simplex*. Like *D. aquatica* the elytra are attractively striped with dark blue and red. The elytra are generally coppery green and the underside is covered in dense silvery hairs.

Occasionally individuals, especially females, lack the coloured stripe (therefore resembling *D. simplex*) and can only be distinguished by the concave and emarginate tip of the elytra. Other useful characters are the tubercule on the pronotum (Bratton and Greenwood, 1997) and the impressions around the eye sockets (Bratton, 1995).

D. vulgaris is found on sheltered lakes and ponds usually in small numbers. Species of *Typha* and *Sparganium* are stated to be the host plants (Menzies and Cox, 1996), but we have also taken adults at sites lacking these species in the west of Ireland, so there would appear to be alternative hosts. Species of *Carex* are mentioned by du Chatenet (2002). A common habit of the adults is to rest just below the tip of the leaf, with the head pointing downwards.

***Plateumaris bracata* (Scopoli, 1772)**

The correct spelling used by Scopoli is *bracata*.

Historical overview

The discovery of *Plateumaris bracata* in Ireland was described in Birchall (1859). It was found 'on the bank of the tarn…on the summit' of Cromaglaun Mountain by N. Cooke and A. A. Dunlop, friends of Birchall, who ascended the mountain on 22 June 1859. The tarn was identified as Crincaum Lough in Halbert (1898b) although this detail is not given in Johnson and Halbert (1902). It was next reported in 1898 from the Sheen River near Kenmare and Dinish Island on Muckross Lake, by JR Hardy and R Standen (Halbert, 1898b). There is no voucher for the 1859 record, but a specimen in NMI bearing labels 'Co. Kerry, given by J.R. Hardy' and '114.98' would appear to be a voucher for the Sheen River record. Halbert recorded it as 'abundant' in 'the saltmarsh on the Slaney bank, near Killurin.' There are specimens in the NMI which would appear to be vouchers for the Killurin records. The labels simply state 'Wexford' and lack a precise date. However, the date can be surmised from Halbert (1935) as it records he collected the heteropteran *Zicrona caerulea* at Killurin on 9 July 1900. There are no other published records, but both the NMI and UM contain specimens collected by several entomologists in Kerry and Wexford. The most recent specimen dates from 1936.

1980 onwards

We have not collected the species or traced any records.

Irish distribution

See Figure 16.

KERRY: small tarn on summit of Cromaglaun Mountain [Crincaum Lake], [V9382], 22 June 1859, N. Cooke and A. A. Dunlop, published Birchall (1859) and Halbert (1898b); [V96], Sheen River, July 1898, J. R. Harding and R. Standen, published Halbert (1898), **NMI**; Dinish Island, [V9385], July 1898, R. Standen, published Halbert (1898b); Dinish, Killarney, [V9385], June 1919, E. F. Bullock, **NMI** and same site, June 1933, E. F. Bullock, **NMI; WEXFORD:** saltmarsh on bank of River Slaney near Killurin, [S9726], [9 July 1900], J. N. Halbert, **NMI**; Castlebridge, [T0526], 29 June 1936, J. N. Halbert, **NMI** and, same data, W. M. Crawford, **UM**.

This is clearly a rare species in Ireland, restricted to just three localities in Kerry and two in Wexford. One of the Wexford records came from a saltmarsh and an association with brackish sites was noted by Fowler (1890), but not remarked on by Menzies and Cox (1996). The host plant is Common Reed *Phragmites australis*.

***Plateumaris rustica* (Kunze, 1818)**

Synonym *P. affinis* (Kunze, 1818) as explained in Askevold (1992)

Historical overview

This was listed on Haliday's manuscript list of Irish insects and there is a specimen labelled 'Haliday' and 'Ireland' in the NMI. It was recorded from Portsalon, Co. Donegal by J. F. Stephens (Johnson and Halbert, 1902). We have traced no other published records but there is a specimen in the NMI labelled 'Co. Donegal' and '4.9.1913'. The precise locality and collector are unknown. It is not listed from Ireland by Fowler (1890), but its occurrence here is noted by Joy (1932), Menzies and Cox (1996) and Ashe *et al.* (1998). The map in Menzies and Cox (1996) indicates its occurrence in Northern Ireland only, presumably in error.

1980 onwards

We have not collected this species nor have we traced any other records.

Irish distribution

See Figure 17.

DONEGAL: Portsalon, [C23], date unknown, J. F. Stephens, published Johnson and Halbert (1902); site unknown, 4 September 1913, **NMI**.

A rare species that has not been seen for over 90 years in Ireland. The two records from Donegal lack precise site details, so searching for the species would require some effort as there are many small lakes in the Portsalon area of north Donegal that could potentially harbour the species.

P. rustica is found on lakes with sedges *Carex* spp. and according to Menzies and Cox (1996) shares the ecological requirements of *D. aquatica*, *impressa* and *thalassina*. It is found in May and June (Menzies and Cox, 1996). The September record from Donegal is therefore anomalous.

***Plateumaris sericea* (Linnaeus, 1758) and *Plateumaris discolor* (Panzer, 1795)**

Historical overview

These species are dealt with together as their taxonomic status is disputed. Askevold (1991) synonomised them, stating that he could find 'no appreciable genitalic differences between specimens of geographically divergent areas such as Poland, Italy and Japan'. Menzies and Cox (1996) maintained them as distinct species arguing that the species can be diagnosed by differences in antennal segments 3 and 4 and the shape of the male genitalia. Further, they argue that differences in the shape of the male genialia are apparent in the photographs in Askevold (1991). Using Menzies and Cox's key most male specimens can be identified to species, and there does appear to be genuine ecological separation between *sericea* and *discolor*. Both taxa show extraordinary variation in colour, not seen in other *Plateumaris*, though the colour of *P. rustica* differs between the sexes. Kurachi *et al.* (2002) have shown that the epicuticle of *P. sericea* has five layers varying in thickness and producing this in colour based on diffraction grating rather than on variation in pigmentation. As the two species are difficult to distinguish, we have disregarded the published records, only accepting records from vouchers and those we

consider have been reliably determined. The records are listed and mapped separately for each species.

Irish distribution — *Plateumaris sericea* sensu stricto

See Figure 18.

ANTRIM: Loughareema, D206357, 21 June 1991, G. N. Foster; Feigh, C987445, 8 June 1992, A. P. Foster; White Park Bay, D023440, 9 June 1992, A. P. Foster; **ARMAGH:** Brackagh Moss, J0251, 20 June 1991, G. N. Foster and same site, 17 June 1996, B. Nelson, **UM; CARLOW:** Borris, [S75], 10 June 1935, A. W. Stelfox, Oxford University Museum; **CLARE:** Ballydonaghan Lough, R606802, 24 May 2003, G. N. Foster; Lough Graney, R559949, 25 May 2003, G. N. Foster; Lough Graney, R558948, 13 June 2005, B. Nelson; Lough Derg, Scarriff Pier, R660841, 13 June 2005, B. Nelson; **DONEGAL:** Coolmore, [G86], July 1894, W. F. Johnson; Templenew, [G9159], July 1894, W. F. Johnson; Bundoran, [G85], 28 June 1941, collector unknown, **UM**; Rossnowlagh Lower, G869962, 10 August 1996, B. Nelson, **UM; DOWN:** Derryleckagh Fen, J117253, 19 June 1991, G. N. Foster; Castle Enigan, J125318, 8 April 1992, R. S. Weyl; White Hill Fen, J252729, August 1992, R. S. Weyl; Lackan Bog, J2437, 7 August 1996, B. Nelson; Dunmore Fen and Black Lough, J358449, July 1997, B. Nelson, **UM**; Ballard Fen, J027230, 1 July 1997, B. Nelson; **FERMANAGH:** Portora, [H2244], 27 May 1935, 30 May 1941 and 2 June 1941, collector unknown, **UM**; Lower Lough Erne, Carrickreagh Bay, [H1751], 11 June 1941, collector unknown, **UM**; Braade, H044548, 22 June 1988, G. N. Foster; Monawilkin Lough, H085530, 22 June 1988, G. N. Foster; Lough Alaban, H069437, 23 June 1988, G. N. Foster; Lough Leen, H130454, 23 June 1988, G. N. Foster; Lough Coole, H255435, 24 June 1988, G. N. Foster; Upper Lough Erne, Inisherk Island, H358243, 26 May 1992, A. P. Foster; Upper Lough Erne, Corraharra Townland, H353224, 27 May 1992, K. N. Alexander and same data, H355237; Upper Lough Erne, Reilly Wood, H337257, 28 May 1992, K. N. Alexander; Upper Lough Erne, Inishfendra, H375236, 28 May 1992, A. P. Foster; Upper Lough Erne, Gole Wood, H332247, 1 June 1992, K. N. Alexander; Lough Coole, H2543, 2 June 1992, A. P. Foster; Rossyvullan, H2643, 2 June 1992, A. P. Foster; Black Lough, H484407, 13 June 1996, B. Nelson; Coolyermer Lough, H181424, 25

June 1998, B. Nelson, **UM**; Legalough, H089346, 10 June 1999, B. Nelson, **UM**; Doagh Lough, H077522, 27 June 1999, B. Nelson, **UM**; River Erne, Ring Townland, H237292, July 1999, B. Nelson, **UM**; Tullyvocady Lough, H058646, 22 June 2001, B. Nelson, **UM**; Brougher Mountain, H355526, 9 June 2006, R. Anderson and H358526, same data; **GALWAY:** River Shannon, Murragh Island callows, M941133, 23 May 2003, E. Regan; Pickford's Lough, R473963, 23 May 2003, G. N. Foster and S. McCormack; **KERRY:** Lough Caragh, [V79], June 1902, H. St J. Donisthorpe; **KILDARE:** Grand Canal, Milltown Feeder, N757180, 24 June 2000, J. Walsh; **LIMERICK:** Lough Gur, R642401, 28 July 2000, J. Walsh; Ballingaddy Lough, R628258, 7 July 2003, J. Walsh; Mount Coote, Kilmallock, R630274, 07 July 2003, J. Walsh; **LONDONDERRY:** Portstewart Dunes, C7936, 12 June 1992, A. P. Foster; **LOUTH:** Omeath, [J11], 31 May 1886, W. F. Johnson, **UM; MAYO:** Lough Carra, Partry House, M166692, 2 July 2003, B. Nelson, **UM; MEATH:** Boyne Canal, east of Slane, N971732, 1 July 2001, J. Walsh; **MONAGHAN:** Summerhill Lough, H491280, 28 June 2000, B. Nelson, **UM**; Killark Lough, N869980, 14 July 2002, J. Walsh; **OFFALY:** Pallas Lough, N270195, 16 June 2002, B. Nelson, **UM**; Lough Roe, S092942, 22 May 2003, G. N. Foster; Charleville fen, N316227, 24 May 2003, R. Anderson; Charleville Woods, N320227, 24 May 2003, A. O'Connor; **SLIGO:** Oghambaun, G5311, 24 March 2003, M. Cawley; **TIPPERARY:** River Shannon, Portland Callows, M884064, 25 May 2003, B. Nelson, **UM**; River Shannon, Portland Callows, M884065, 25 May 2003, G. N. Foster; **TYRONE:** Cullentra Lough, H476475, 13 June 1996, B. Nelson; Lough McCall, H540482, 13 June 1996, B. Nelson; Loughpatrick, H507686, 19 June 1996, B. Nelson; Maghera Lough, H300577, 19 June 1996, B. Nelson; **WATERFORD:** Portlaw, S4415, 7 July 1988, J. P. O'Connor; Monaneea Lake, X217843, 18 July 2000, J. Walsh; **WESTMEATH:** Lough Derravaragh, N424690, 15 July 2000, J. Walsh; **WEXFORD:** site unknown, 1902, J. J. F. X. King, Hunterian Glasgow

Irish distribution — *Plateumaris discolor*

See Figure 19.

ANTRIM: Divis Quarry, [J27], 1 July 1936, W. M. Crawford; Inver River, D218197, 9 July 1977, R. Anderson, **UM**; Collinward Mountain, J323803, 29 May 1982, R. Anderson; Clare Wood, D0641, 1 July 1986, R. C. Welch; Slieveanorra Forest, D158228, 1992, A. Cameron; Lough Fadden, D187419, 15 June 1992, A. P. Foster; Giant's Causeway, C9545, 8 June 1992, K. N. Alexander; Cushleake Mountain, D2236, June 1992, A. P. Foster; Inver River, Crockravar, D222190, 21 June 1995, R. Anderson; Lough Naroon, D004175, 24 June 1995, R. Anderson; Montiaghs Moss, J092655, 16 June 1999, A. F. Fowles; Inver River, Crockravar, D223190, 27 June 1999, B. Nelson, **UM; ARMAGH:** Churchill, [H86], 24 May 1890, W. F. Johnson, **UM**; Scarva, [J04], 12 May 1896, W. F. Johnson, **UM**; Crossbane Lough, H809299, 19 June 1997, B. Nelson; Selshion Bog, H986545, June 1999, B. Nelson, **UM**; Brackagh Moss, J016510, 16 June 1999, A. F. Fowles and R Key; **CARLOW:** River Barrow, Clashganny Lock, S735457, 5 June 2005, C. Ronayne; **CAVAN:** Virginia, N586882, 30 May 1982, J. P. O'Connor and M. A. O'Connor, **NMI**; Drumeague Lough Upper, H665022, 28 June 2001, B. Nelson, **UM; CLARE:** Lough Graney, R559948, 27 May 2002, B. Nelson, **UM** and R555947, 25 May 2003, A. O'Connor, E. Regan and M. N. Smith; Ballydonaghan Lough, R606802, 24 May 2003, F. Waldron; Hollymount, R453934, 24 May 2003, M. N. Smith; Lough Bunny, R377965, 25 May 2003, R. C. Welch; Finn Lough, R435703, 26 May 2003, R. C. Welch; **CORK**: Kenmare, [V97], 1892, **NMI**; Bear Island, [V64], 3 June 1893, J. N. Halbert, **NMI**; Castletown Berehaven, [V64], 3 June 1893, J. N. Halbert, **NMI**; Glandore, [W2235], 1900, **NMI**; Glengarriff, [V95], August 1924, J. N. Halbert, **NMI; DONEGAL:** Coolmore, [G86], 1895, W. F. Johnson, **NMI**; Portnoo, [G69], 19 June 1904 and 27 June 1904, W. F. Johnson, **UM**; Tullyearl, G928759, 1 July 1977, R. Anderson; Pond Lough, G695987, 3 August 1996, R. Anderson; Lough Ea, G918957, 17 July 2000, B. Nelson, **UM; DOWN:** Aughnadarragh Lough, J442592, 23 July 1987, R. Anderson; William's Harbour, J389260, 13 June 1995, R. Anderson; Conlig Hill, J494767, 13 June 1995, R. Anderson; Ballybannan fen, J372357, B. Nelson, **UM; DUBLIN:** Glenasmole Upper, [O02], 20 May 1922, A. W. Stelfox, **NMI**;

Glenasmole, [O02], 9 June 1925, A. W. Stelfox, **NMI; FERMANAGH:** Belleek, [G95], July 1890, W. F. Johnson, **UM**; Lough Naman Bog, H023525, 1991, A. Cameron; Bolusty Beg, H049569, 1992, A. Cameron; Upper Lough Erne, Corraharra Townland, H355227, 27 May 1992, K. N. Alexander; Correl Glen, H0854, 19 July 1994, B. Nelson, **UM**; Mill Lough, H2438, 21 July 1994, B. Nelson, **UM**; Lough Slane, H338257, 21 July 1994, B. Nelson, **UM**; Tullywannia Lough, H043503, 29 June 1995, B. Nelson, **UM**; Lough Cushkeery, H486399, 17 June 1999, B. Nelson, **UM**; Corranny Lough, H478332, 17 June 1999, B. Nelson, **UM**; Lough Navadogue, H485411, 25 June 2003, B. Nelson, **UM**; Brougher Mountain, H350518 and H358526, 9 June 2006, R. Anderson; **GALWAY:** Clonbrock, [M73], [date unknown], [collector unknown], **NMI**; Recess, [L8547], 25 May 1894, J. N. Halbert, **NMI**; Pickfords Lough, R474964, 23 May 2003, B. Nelson, **UM; KERRY:** Ventry, [Q3800], 31 May 1894, J. N. Halbert, **NMI**; Glencar, [V78], June 1902, H. Donisthorpe and F. Bouskell, published Donisthorpe (1903); Killarney, [V98], June 1917, E. F. Bullock, **NMI**; Muckross, Killarney, [V98], 1919, E. F. Bullock, **NMI**; Brandon Mountain, [Q41], 7 July 1971, A. Irwin, **UM**; Galway's Bridge, V914801, 7 July 2001, C. Ronayne and V915802, 10 June 2005, B. Nelson, **UM; KILDARE:** Leixlip, [N93], 18 May 1928, E. O'Mahony, **NMI** and Oxford University Museum; Rye Water, [N93], 29 June 1950, E. O'Mahony, **NMI**; Louisa Bridge, N992368, 15 May 1982, D. Murphy, **NMI** and N994366, 18 June 2005, C. Ronayne; Kingsbog, N7108, 16 June 1998, C. Ronayne; **LONDONDERRY:** Avish, C7233, June 1992, K. N. Alexander; The Umbra, C7335, 11 May 1994, B. Nelson, **UM**; Lough Bran, C834034, 10 June 2001, R. Anderson; Slugawn Bog, H958927, 3 June 2006, R. Anderson; **LOUTH:** Stormanstown Bog, N9192, 10 May 2000, C. Ronayne; **MEATH:** Boyne Canal, east of Slane, N971732, 22 June 2003, J. Walsh; **MONAGHAN:** Summerhill Lough, H490281, 28 June 2000, B. Nelson, **UM** and same data, R. Anderson; **OFFALY:** Charleville fen, N315226, 24 May 2003, E. Regan and N316227, 24 May 2003, R. Anderson; **SLIGO:** Lough Gill, Clogherevagh, [G7534], 6 June 1887, W. F. Kane, **UM**; Rosses Point, [G6341], June 1905, W. F. Johnson, published Johnson (1905), **UM**; Mullaghmore, [G75], 20 June 1937, collector unknown, **UM;** Cliffony, [G75], 27 June 1948, collector unknown, **UM**; Bunduff Lough, G7155, 6 June 1998, B. Nelson, **UM;**

TIPPERARY: River Shannon, Portland Callows, M883064, 23 May 2003, R. Anderson and M884063, 25 May 2003, E. Regan and M. N. Smith; **TYRONE:** Teal Lough, H7387, 20 June 1988, G. N. Foster and H7388, 12 June 1994, B. Nelson, **UM**; Killeter Forest, H089809, 1991, H088808, 1992 and H091809, 1992, A. Cameron; Maghera Lough, H308557, 19 June 1996, B. Nelson, **UM**; Lough Fadda, H447485, 11 June 1999, B. Nelson, **UM**; Cullentra Lough, H476475, 13 June 1996, B. Nelson, **UM**; Lough Patrick, H507686, 19 June 1996, B. Nelson, **UM**; Lough Na Blaney Bane, H580475, 15 June 1999, B. Nelson, **UM**; Black Lough, H7153, 25 June 2003, B. Nelson, **UM; WESTMEATH:** Walshestown Fen, N3854, June 1989, D. T. Bilton and D. A. Lott, published Bilton and Lott (1991); **WEXFORD:** Screen Hills, T1029, June 1989, D. T. Bilton and D. A. Lott, published Bilton and Lott (1991); **WICKLOW:** Powerscourt, [O21], 29 May 1927, A. W. Stelfox, Oxford University Museum; Deer Park, Powerscourt, [O2012], 3 June 1927, E. O'Mahony, Oxford University Museum.

P. sericea and *discolor* have both been recorded throughout Ireland and the joint distribution is the most extensive of all the Irish donaciines. There is a preponderance of records of both species from Northern Ireland which is considered to relate to collecting effort. There is much overlap in the two species, but *P. discolor* shows a more northerly distribution. The absence from much of the west (Galway and Mayo) cannot be explained.

Menzies and Cox (1996) commented that the two species are separated ecologically with *sericea* occurring on neutral and base-rich sites and *discolor* on acid sites. This habitat separation does appear to apply in general in Ireland, but our records do indicate some overlap. Specimens found on raised and blanket bog are invariably *P. discolor*; specimens from lowland lakes and fens are generally *P. sericea*. However, both species can occur together at lakes that merge into poor fen or bogs.

***Macroplea appendiculata* (Panzer, 1794)**

This is the only member of the Hemoninii tribe found in Ireland. A second species, *Macroplea mutica* (Fabr.), is found in Britain, and is associated with brackish water (Menzies and Cox, 1996).

Historical overview

The first published reference to *M. appendiculata* in Ireland was in Halbert (1893) recording the find of an adult in the Royal Canal near Dublin 'about a mile above the Pin Mill, near Glasnevin' on 8 April 1893. An earlier record appears in Haliday's manuscript list of Irish insects recording it from Meath at the 'Hill of Down, in the canal, in *Potamogeton*, Dr. Allman.' (Johnson and Halbert, 1902). Voucher specimens in museum collections (NMI, UM and Oxford) show that the species was taken on at least five occasions between 1894 and 1925 around Dublin by Bullock, Halbert and O'Mahony. Most of these specimens are labelled Royal Canal and it is presumed that they came from Halbert's original site. There are two other specimens in the NMI (details which have never been published), one from the Armagh shore of Lough Neagh and a second from the Naas arm of the Grand Canal. Finally, Halbert (1937) published a record from Lough Rea, Galway.

1980 onwards

Monahan and Caffrey (1996) found *M. appendiculata* in six sites on the Grand, Royal and Barrow canals during vegetation surveys in 1992 and 1993. The beetles were found in 'large numbers' in April. This paper also states that the authors had recorded the species 'on the lower River Shannon', but without mentioning specific localities. A record from Lough Skale (Fermanagh) was published in Neale *et al.* (2003), and at the time was considered the first Northern Ireland record. To this list we add unpublished records from Galway and Sligo.

Irish distribution

See Figure 20.

ARMAGH: Lough Neagh, Co. Armagh shore, grid reference unknown, 12 June 1909, **NMI; DUBLIN:** Royal Canal, near Dublin, about one mile above Pin Mill, Glasnevin, [O13], 8 April 1893, J. N. Halbert, published Halbert (1893), **NMI**; Royal Canal, [O13], 4 May 1910, E. O'Mahony, Hope Collection, Oxford; Dublin, grid reference unknown, April 1925, E. F. Bullock, **NMI**; Royal Canal, [O13], 28 May 1925, J. N. Halbert, **NMI**; Royal Canal, Dublin, [O13], July 1925, E. O'Mahony, **NMI**; Grand Canal, east of lock 12, O0332, 1992, published Monahan and Caffrey (1996); **FERMANAGH:** Lough Skale, H309441, 6 April 2002, M.

Neale, published Neale *et al.* (2003), **UM; GALWAY:** Lough Rea, [M6016], 1937, J. N. Halbert, published Halbert (1937); Lough Kinlea, Emlagh, M5215, 17 June 2002, E. Regan; Lough Corrib, M0552, 30 October 2002, F. Waldron; **KILDARE:** Grand Canal (Naas Branch), Limerick Bridge, [N8718], 23 April 1934, A. W. Stelfox and E. O'Mahony, **NMI**; Barrow Canal, Ummeras Bridge, [N6415 grid reference corrected from paper], 1992, published Monahan and Caffrey (1996); **LAOIS:** Barrow Canal, Vicarstown, N6100, 1992, published Monahan and Caffrey (1996); **MEATH:** Royal Canal, Hill of Down, N6547, Dr Allman, Haliday manuscript list, published Johnson and Halbert (1902).

OFFALY: Grand Canal, Belmont, N0622, 1992, published Monahan and Caffrey (1996).

SLIGO: Cloonacleigha Lough, G6015, 20 May 1993, M. Cawley; **WESTMEATH:** Royal Canal, Coolnahay, N3553, 1992, published Monahan and Caffrey (1996); Royal Canal, Baltrasna, N4751, 1992, published Monahan and Caffrey (1996).

This is the best-studied Irish species due to the work of Monahan and Caffrey (1996) who gave a comprehensive account of the phenology of the beetle and host plants used in the Barrow, Grand and Royal Canals. This data was gathered in the course of an intensive study of the aquatic flora of the canals during which the *Macroplea appendiculata* adults, larvae and cocoons were found amongst the sampled plants. *Myriophyllum* is often cited as the preferred host plant of this species, but Monahan and Caffrey (1996) found that the beetle showed a definite preference for *Potamogeton* species, especially *P. pectinatus*. The species was also found attached to *Potamogeton coloratus*, *P.* x *salicifolius*, *P. natans* and *Sagittaria sagittifolia*. None was found attached to *Myriophyllum* despite this being the dominant vegetation over long sections of the canals.

Discussion

The donaciine beetles are an ecologically distinct group of chrysomelid beetles, having an amphibious life history, in association with aquatic and semi-aquatic plants. With the decline in wetlands in much of western Europe, the status of many species is threatened. Information on the species in Ireland has been sketchy and dispersed in the literature so we have prepared this

comprehensive account of the Irish species so that their status can be assessed. Based on our examination of museum specimens and field collection we consider that there are 19 species of donaciines on the Irish list (see the Appendix). This includes 14 species of *Donacia,* 4 *Plateumaris* and 1 *Macroplea*. Our list differs from the last published Irish beetle checklist of Anderson *et al.* (1997) as we have added *D. sparganii*, but removed *D. dentata* as we consider the record of it as unconfirmed (see below). Ireland therefore is rich in these beetles, having 90% of the species present in Great Britain. This figure is well above the average for invertebrates in general (65%) and freshwater insects (73%) (McCarthy, 1986). Some taxa within the water beetles are almost as rich; representation in Ireland of the Gyrinidae (whirligigs) is 83% of the 12 British species and for the Scirtidae (marsh beetles) it is 85% of 20 species. However, we are not aware of any other group of phytophagous invertebrates that matches the figure for the donaciines.

Current status

Four species, *D. semicuprea*, *D. sparganii*, *P. bracata* and *P. rustica*, have not been recorded in Ireland in the last 70 years and all are presumed regionally extinct. However there is a reasonable likelihood that populations of some, if not all, still remain somewhere in Ireland. Of the other species, the populations of most appear healthy at present. Two species, *D. cinerea* and *D. aquatica*, appear to give greatest cause for concern. The former appears genuinely rare in Ireland, although we cannot infer a reason for this, whilst there is some evidence of decline in *D. aquatica*. However, more information is needed to assess if this decline has been as severe as that seen in Great Britain. Lastly, *D. bicolora* is considered highly threatened in Great Britain, but the Irish populations appear widespread, robust and not endangered.

Anomalous records

Several early records of the group now appear anomalous with the benefit of additional ecological information. The records from Crincaum Lough (V9382) are the most glaring of these. Three species of donaciine have been added to the Irish list from this small lake on

Cromaglaun Mountain in Killarney National Park — *Plateumaris bracata* in 1859 (Birchall, 1859) and *Donacia dentata* and *D. semicuprea* in 1898 (Halbert, 1898b). The two *Donacia* species were collected on the same day (9 July 1898) by Horace Gore Cuthbert (Halbert, 1898b). This alone is remarkable, but these two species occur here in the absence of their stated foodplants (*Sagittaria sagittifolia* and *Glyceria maxima,* respectively) which have never been recorded from this part of Ireland (Preston *et al*., 2002). Although we have been unable to visit Crincaum Lough (which is rather inaccessible), our limited information on the lake and our experience of other lakes in the region, both suggest that it does not provide suitable habitat for either of these species. The Crincaum record of *dentata* remains the sole Irish record, but there is a second, acceptable, record of *D. semicuprea*. However, we are unable to provide an explanation for these puzzling records.

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APPENDIX. Checklist of the Irish donaciine beetles (Coleoptera, Chrysomelidae, Donaciinae).

***DONACIA* FABRICIUS, 1775**

aquatica (Linnaeus, 1758)
bicolora Zschach, 1788
cinerea Herbst, 1784
clavipes Fabricius, 1792
crassipes Fabricius, 1775
impressa Paykull, 1799
marginata Hoppe, 1795
obscura Gyllenhal, 1813
semicuprea Panzer, 1796
simplex Fabricius, 1775
sparganii Ahrens, 1810
thalassina Germar, 1811
versicolorea (Brahm, 1790)
vulgaris Zschach, 1788

***PLATEUMARIS* THOMSON, 1859**

bracata (Scopoli, 1772)
braccata auctt.
discolor (Panzer, 1795)
rustica (Kunze, 1818)
sericea (Linnaeus, 1758)

***MACROPLEA* SAMOUELLE, 1819**

appendiculata (Panzer, 1794)

FIGURE 1. Coverage map showing distribution of all records of the Irish donaciines.

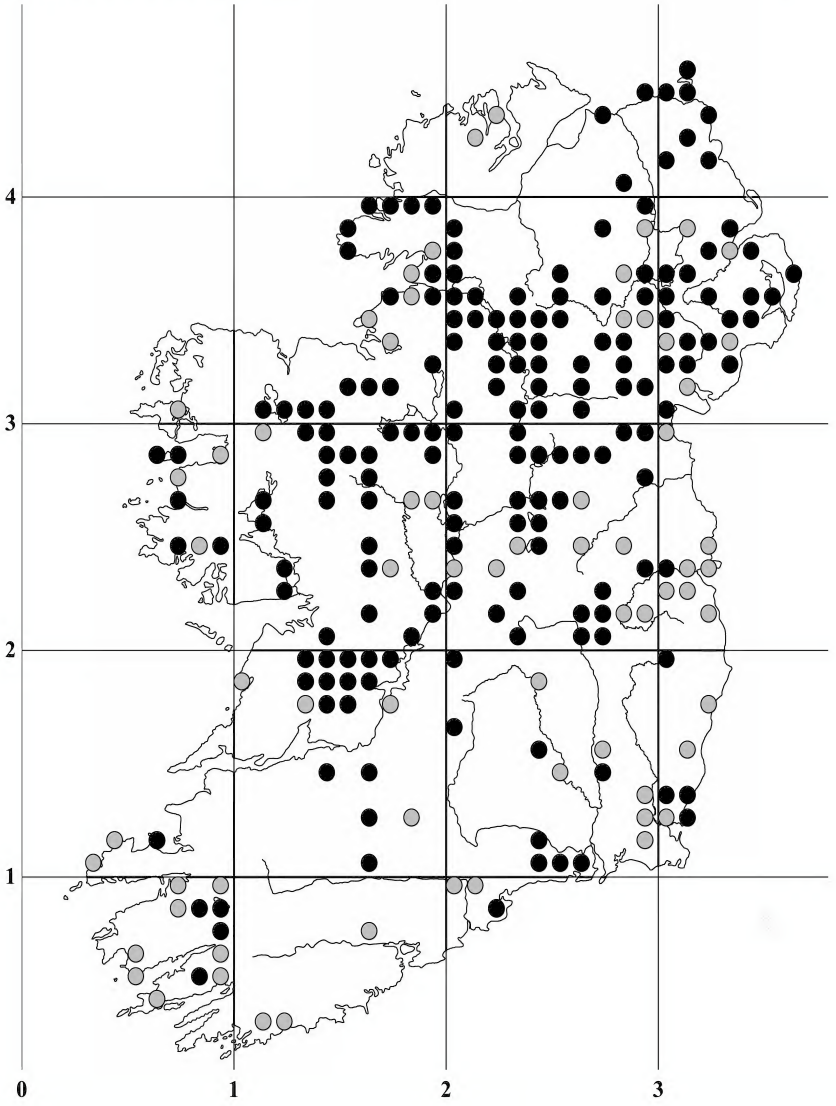


FIGURE 2. Distribution of *Donacia aquatica*.

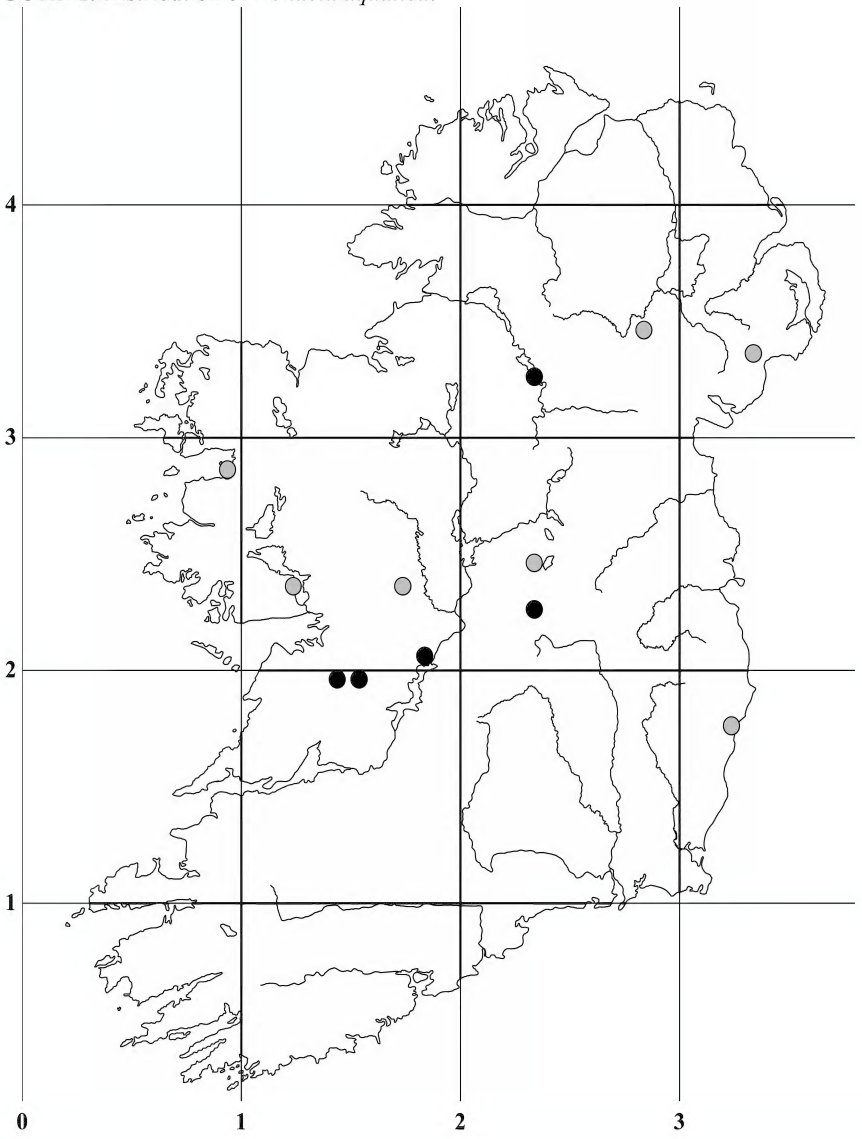


FIGURE 3. Distribution of *Donacia bicolora*.

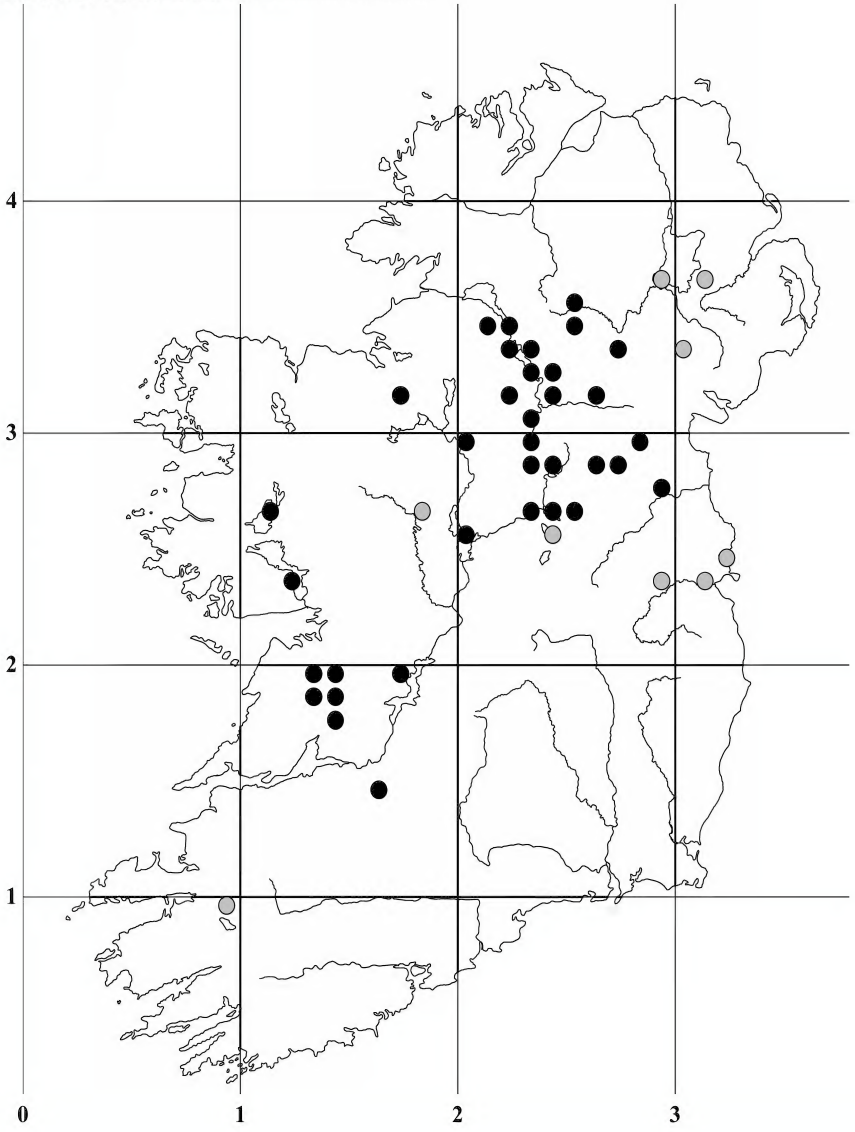


FIGURE 4. Distribution of *Donacia cinerea*.

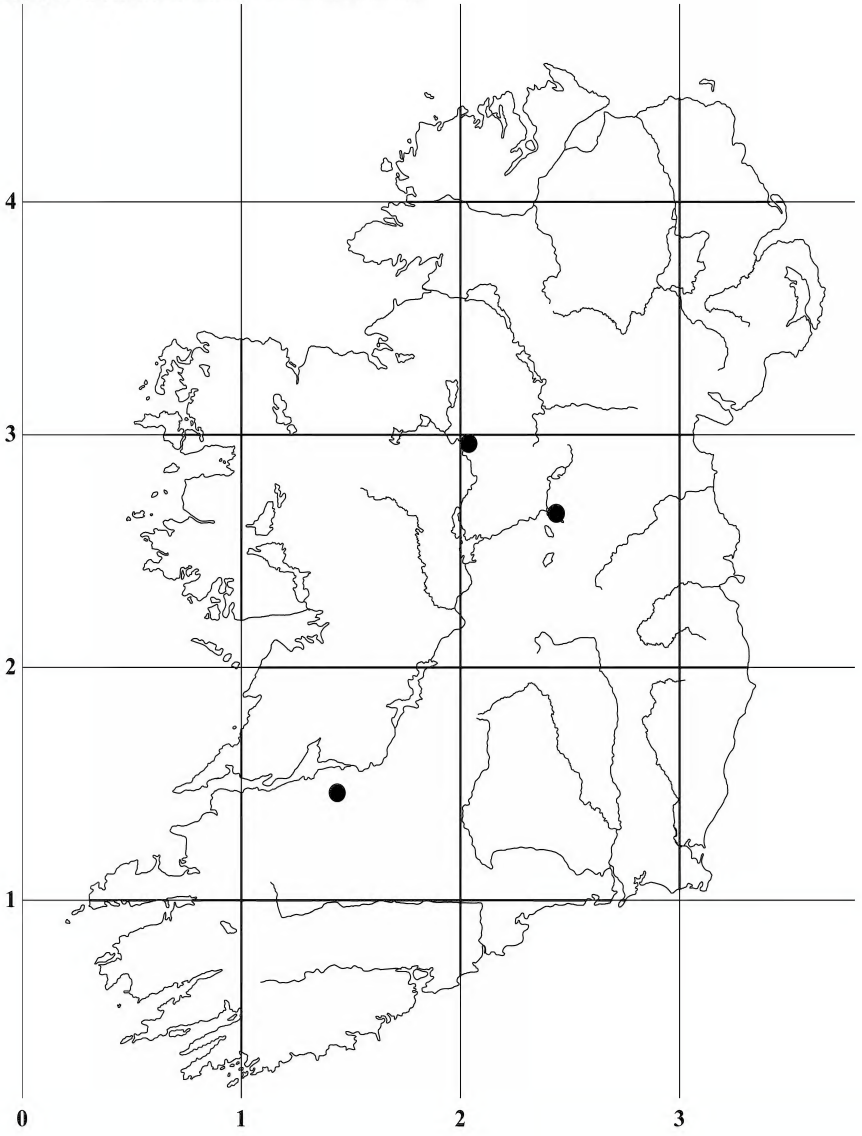


FIGURE 5. Distribution of *Donacia clavipes*.

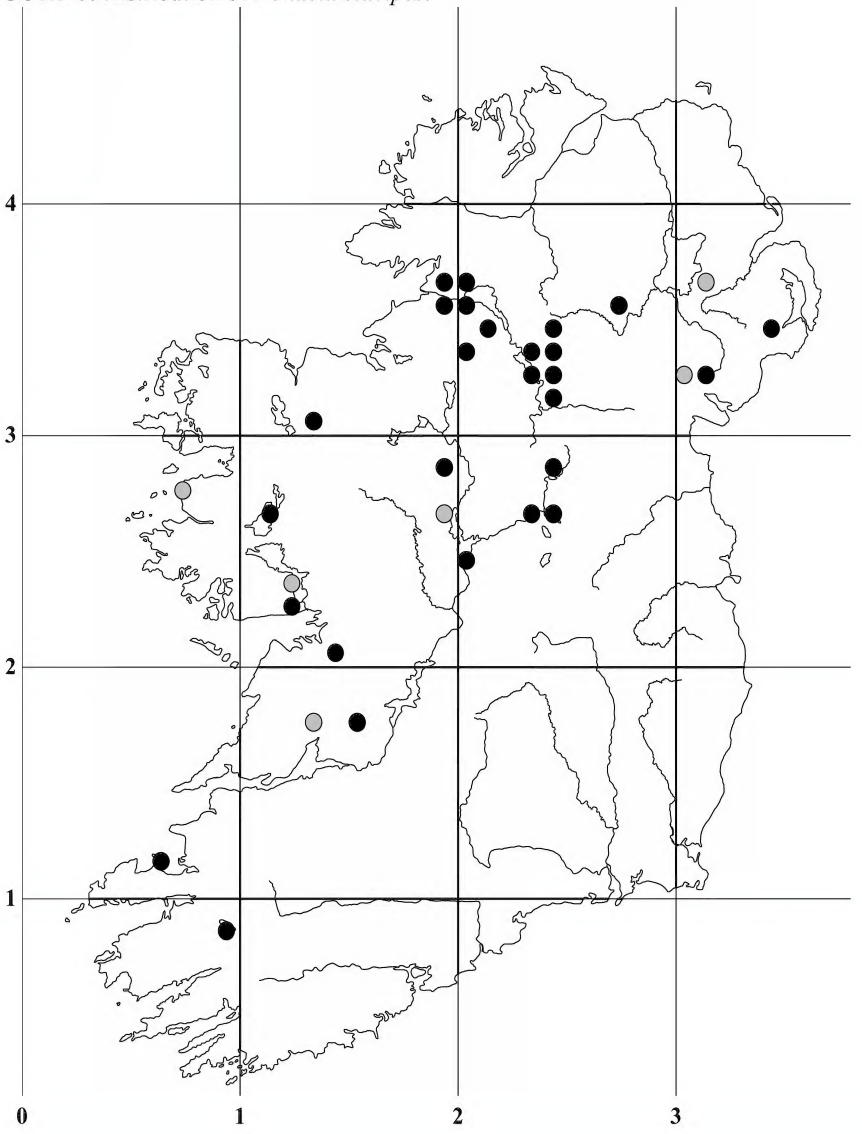


FIGURE 6. Distribution of *Donacia crassipes*.

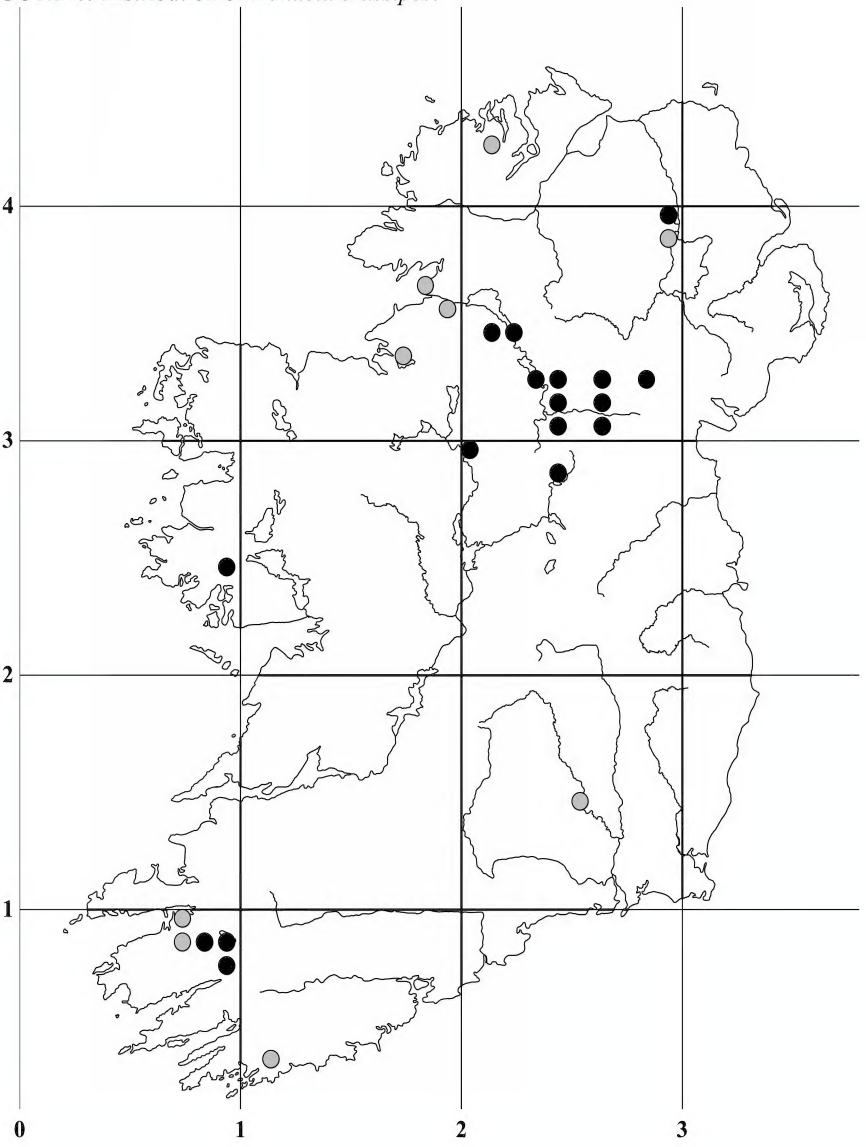


FIGURE 7. Distribution of *Donacia impressa*.

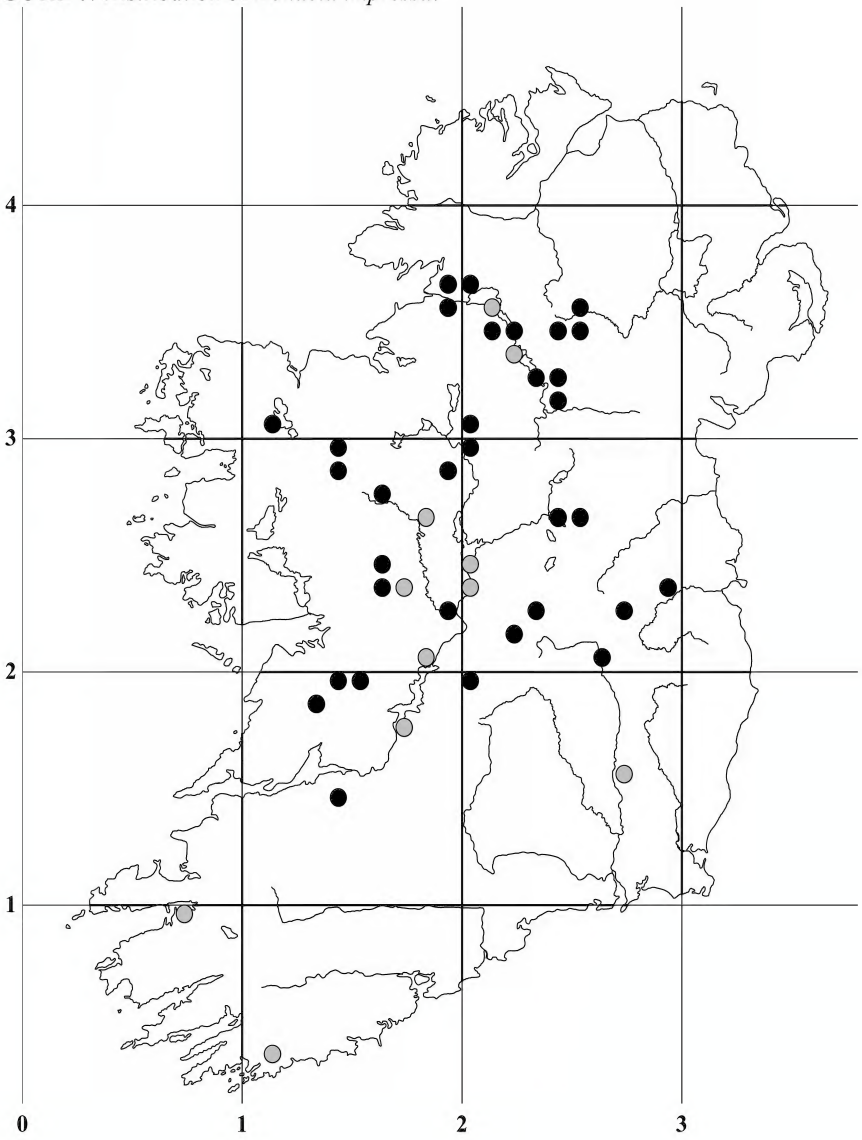


FIGURE 8. Distribution of *Donacia marginata*.

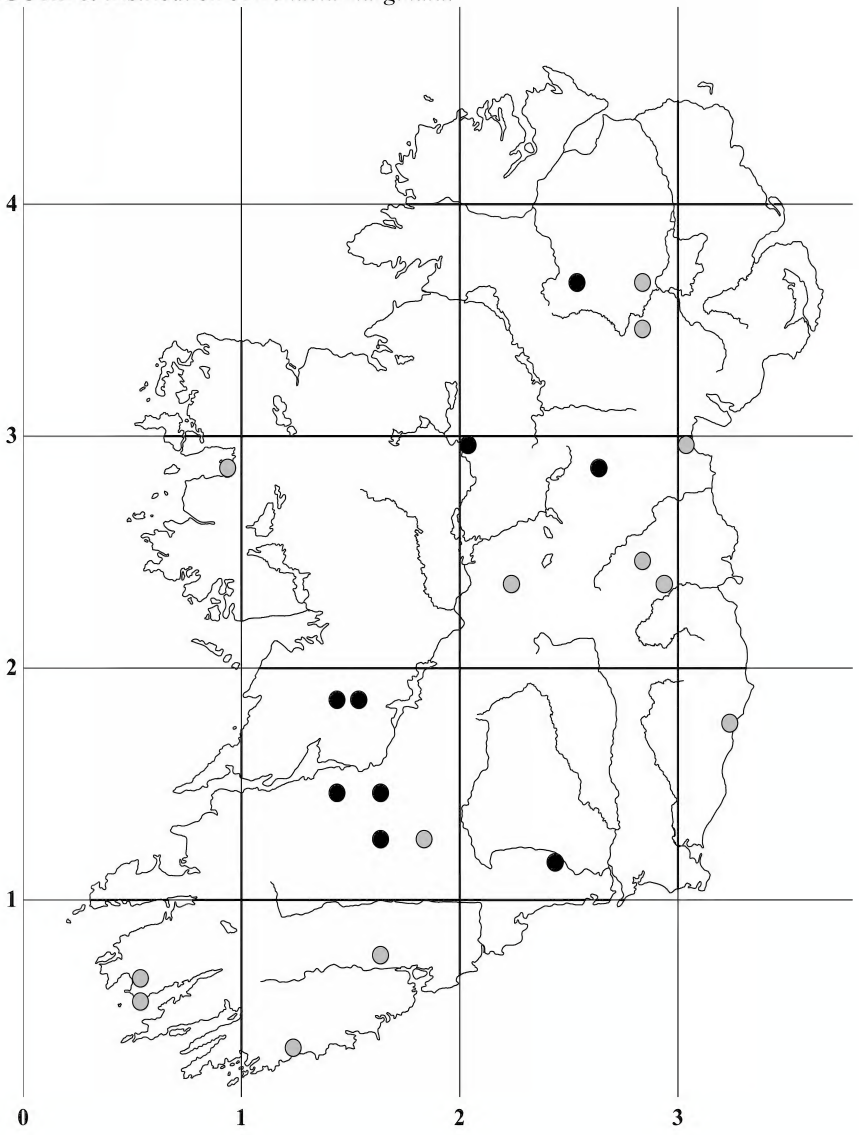


FIGURE 9. Distribution of *Donacia obscura*.

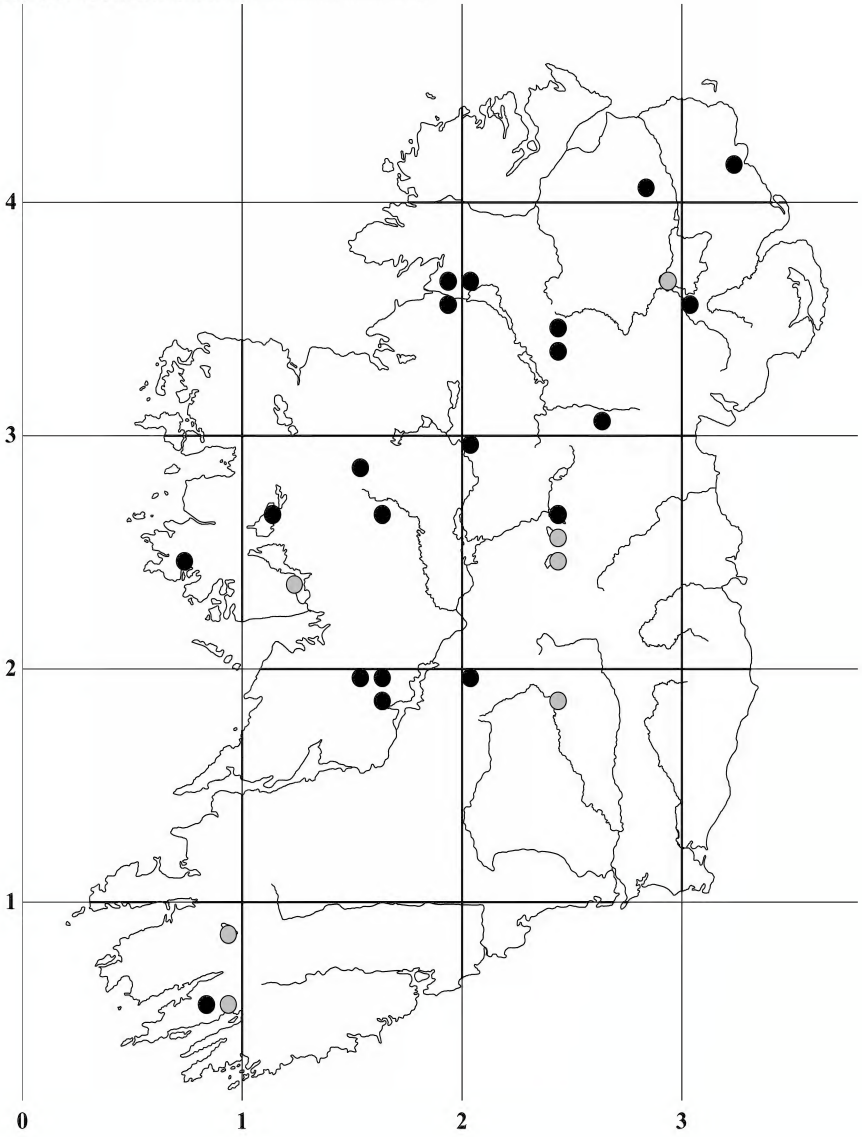


FIGURE 10. Distribution of *Donacia semicuprea*.

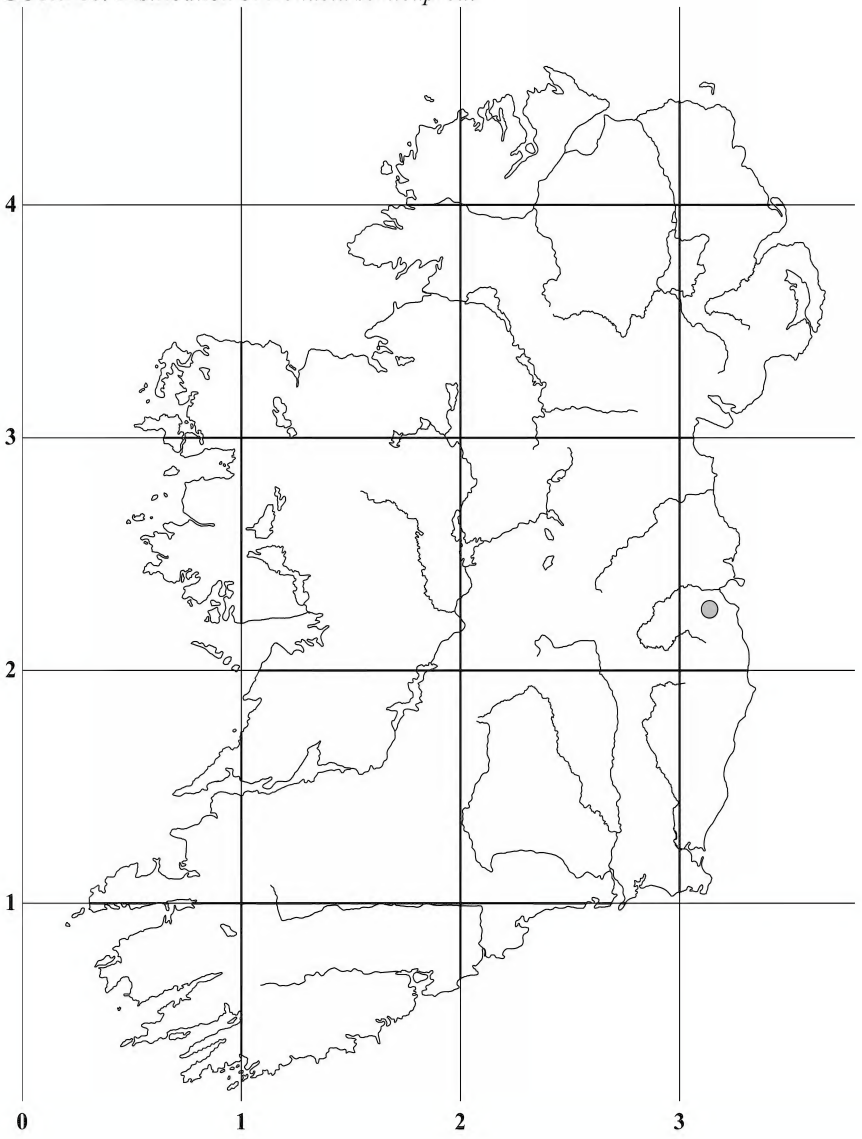


FIGURE 11. Distribution of *Donacia simplex*.

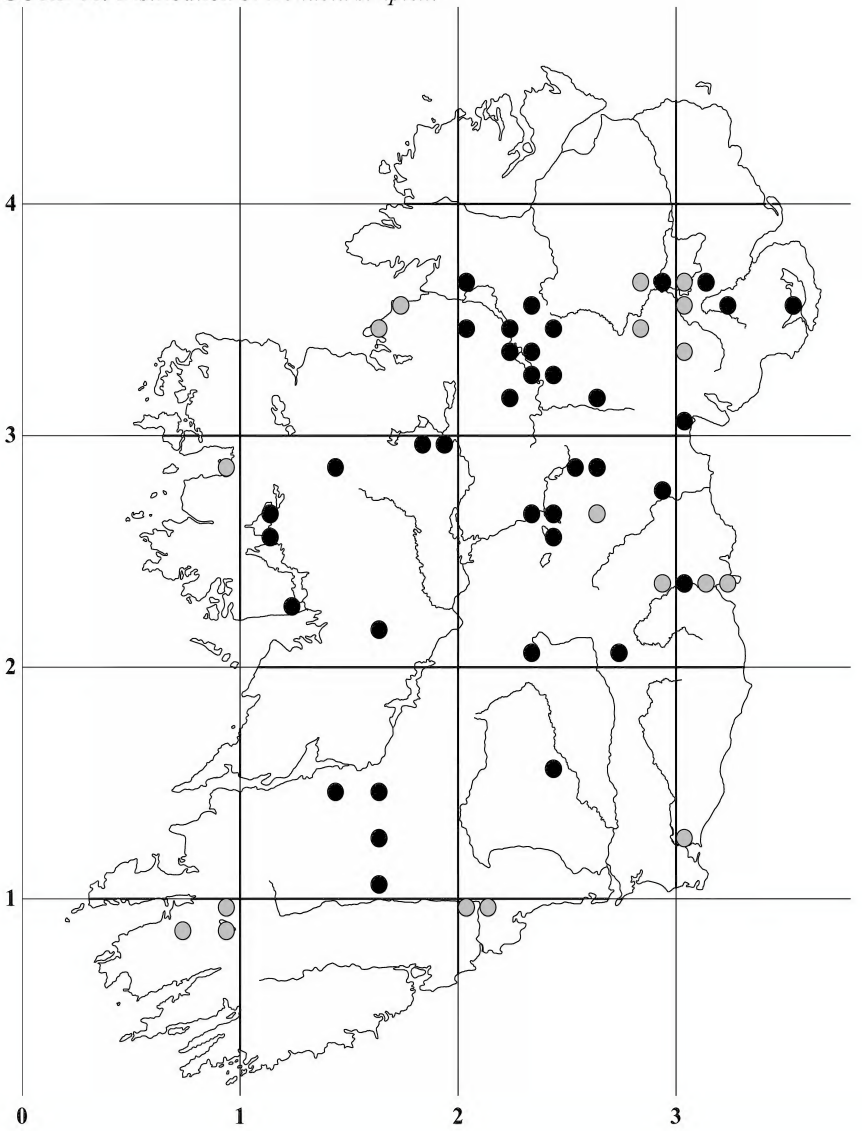


FIGURE 12. Distribution of *Donacia sparganii*.

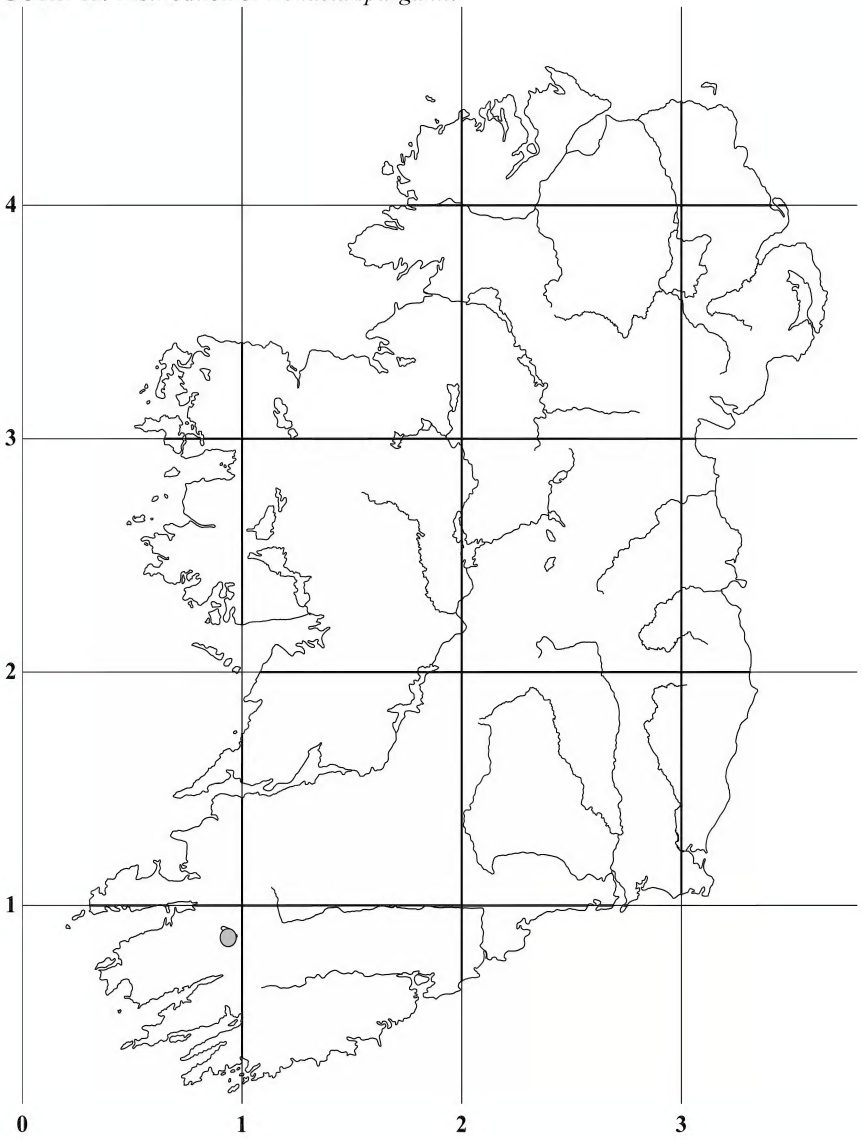


FIGURE 13. Distribution of *Donacia thalassina*.

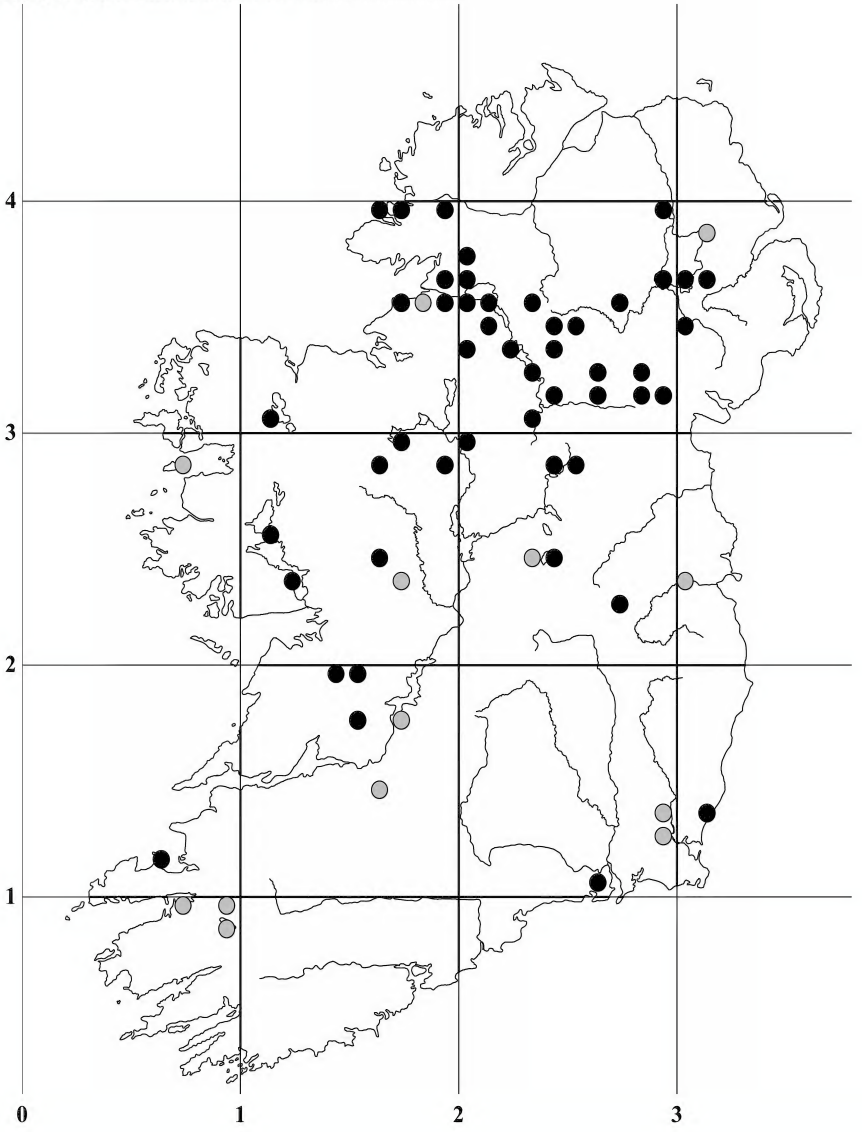


FIGURE 14. Distribution of *Donacia versicolorea*.

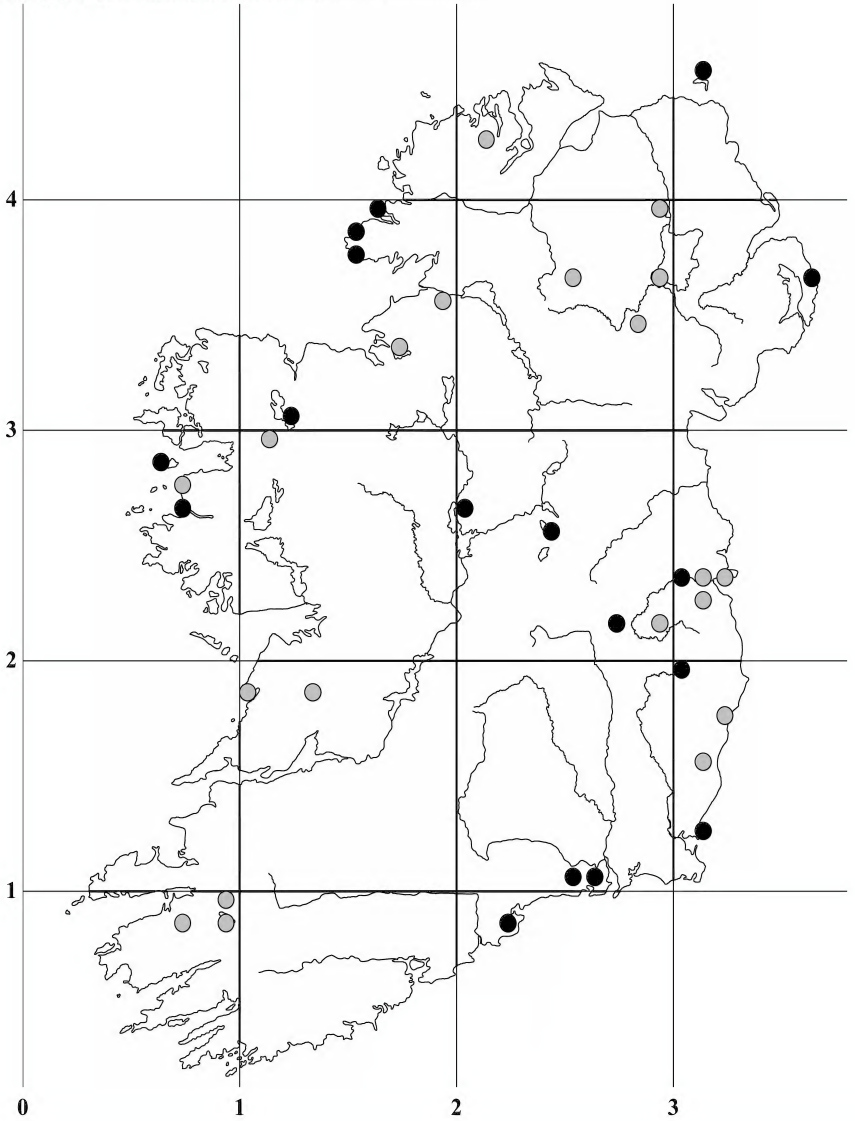


FIGURE 15. Distribution of *Donacia vulgaris*.

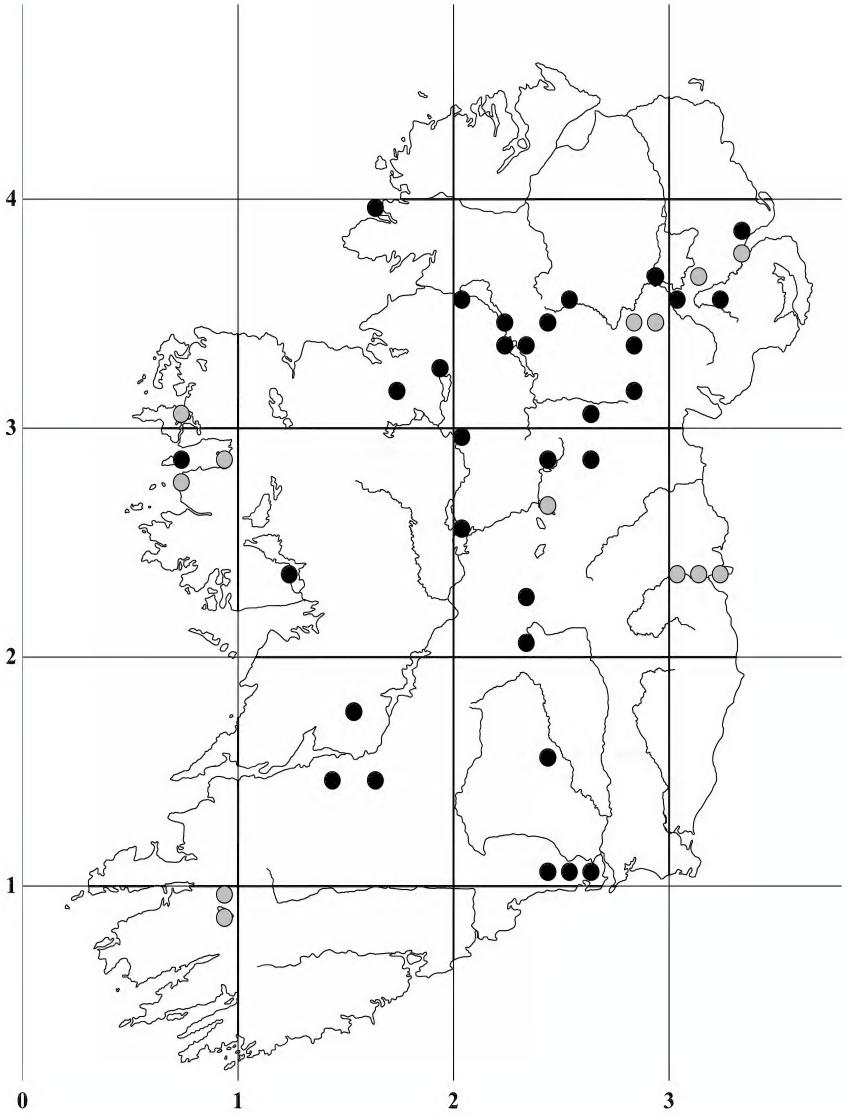


FIGURE 16. Distribution of *Plateumaris bracata*.

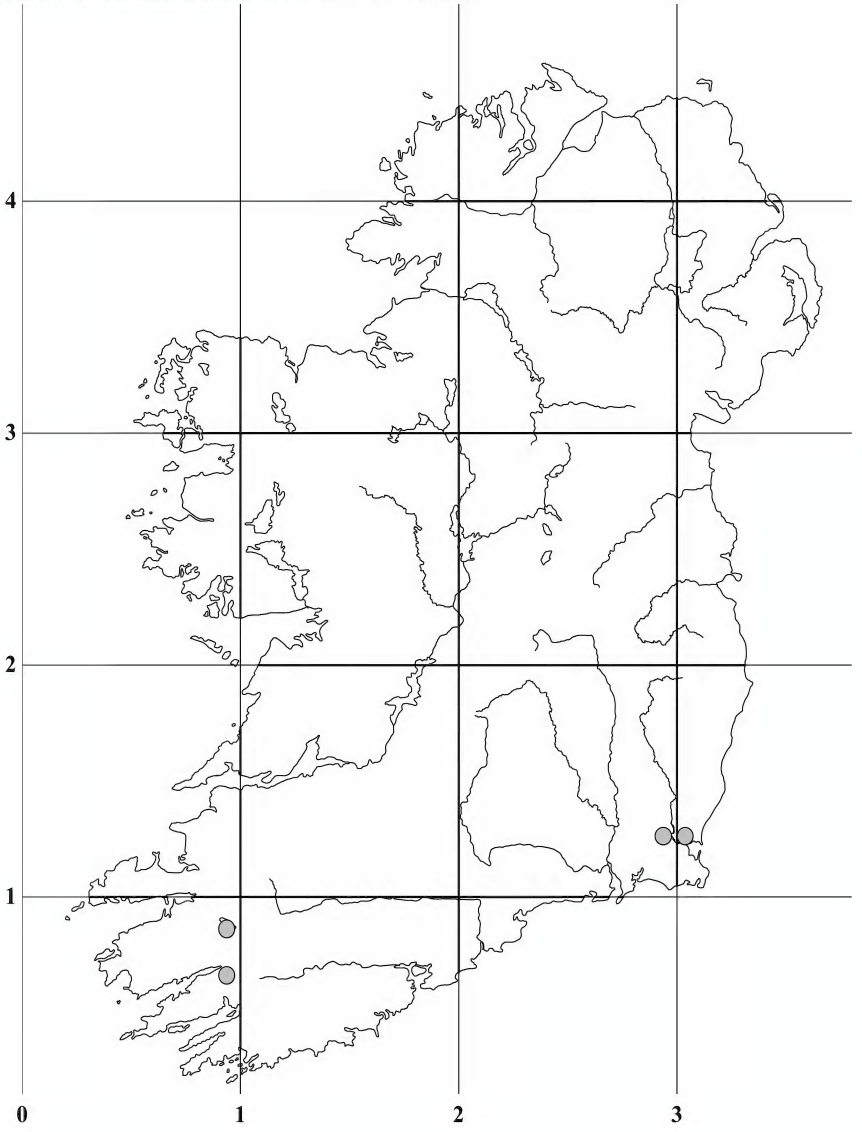


FIGURE 17. Distribution of *Plateumaris rustica*.

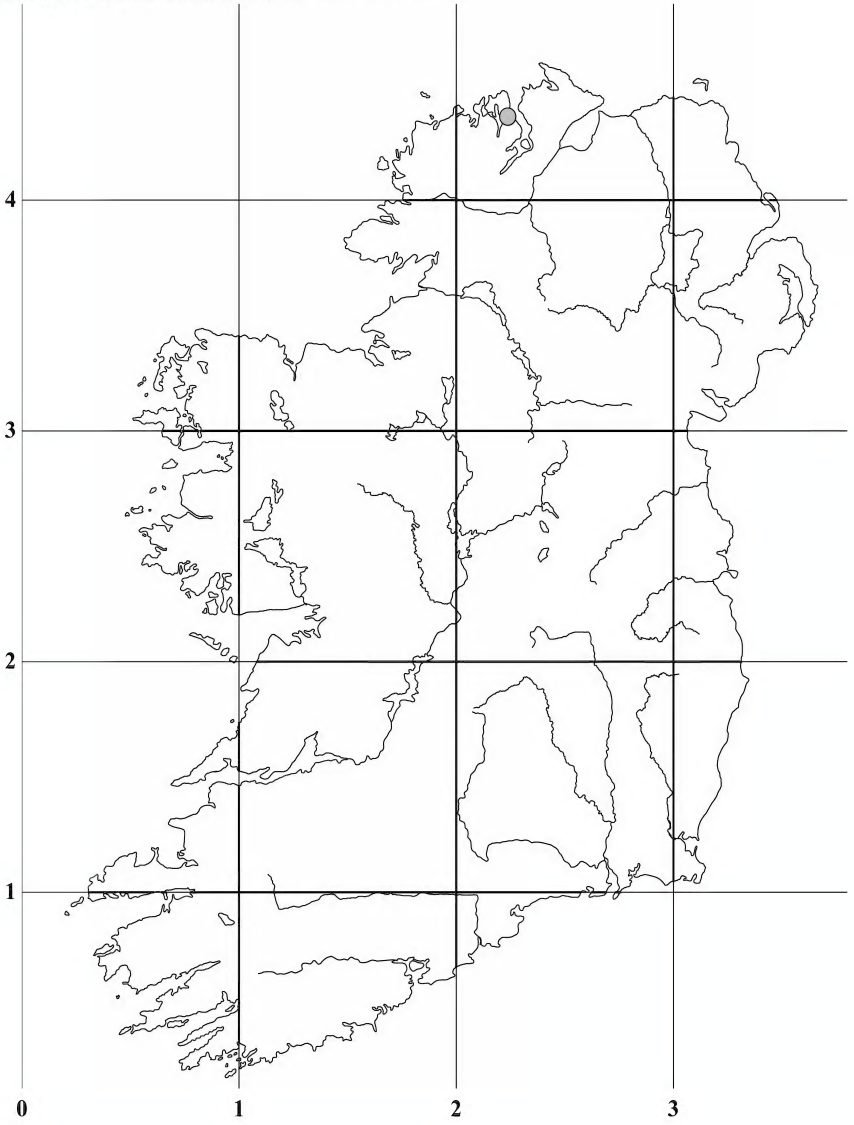


FIGURE 18. Distribution of *Plateumaris sericea*.

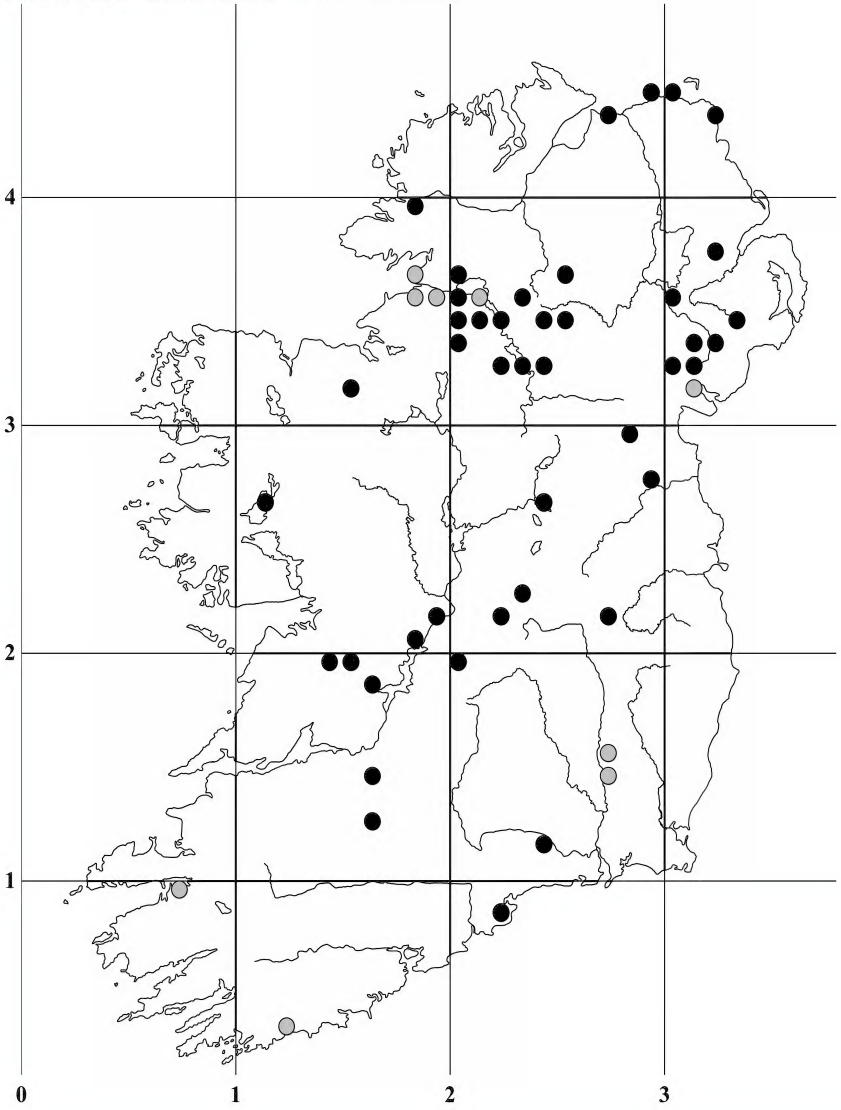


FIGURE 19. Distribution of *Plateumaris discolor*.

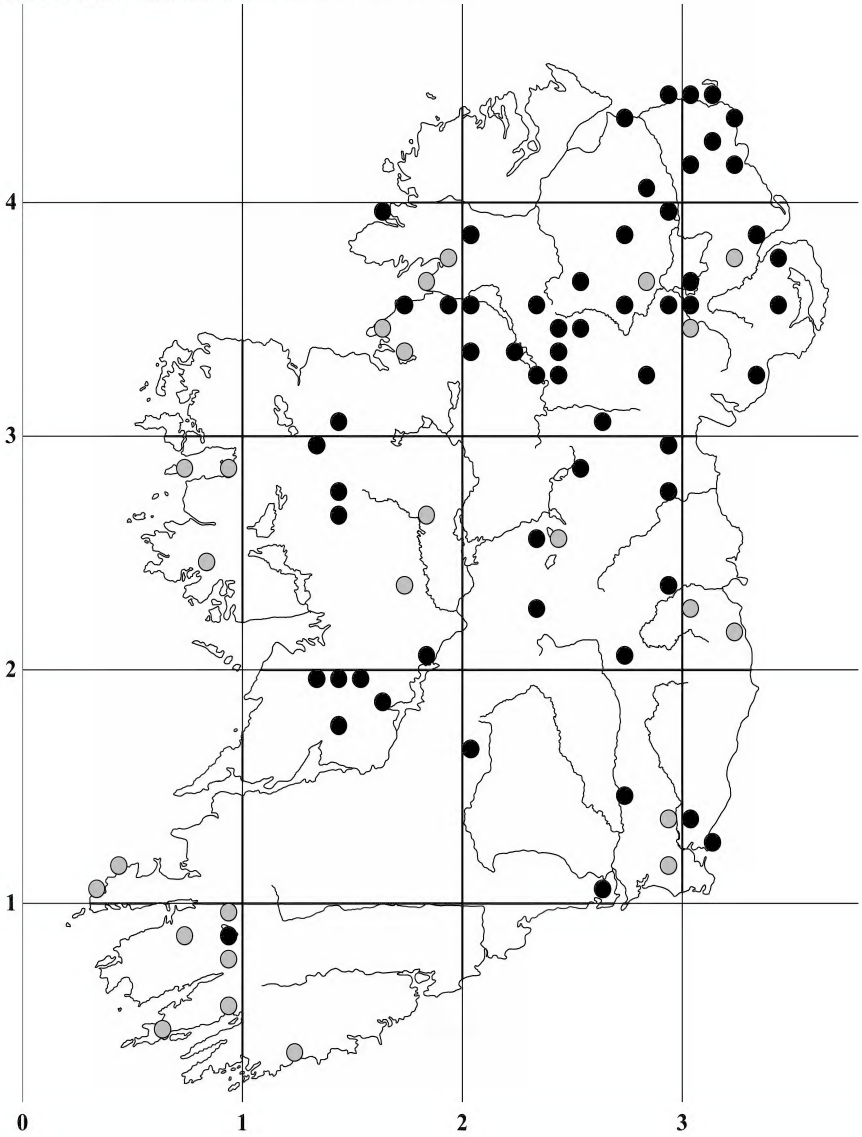
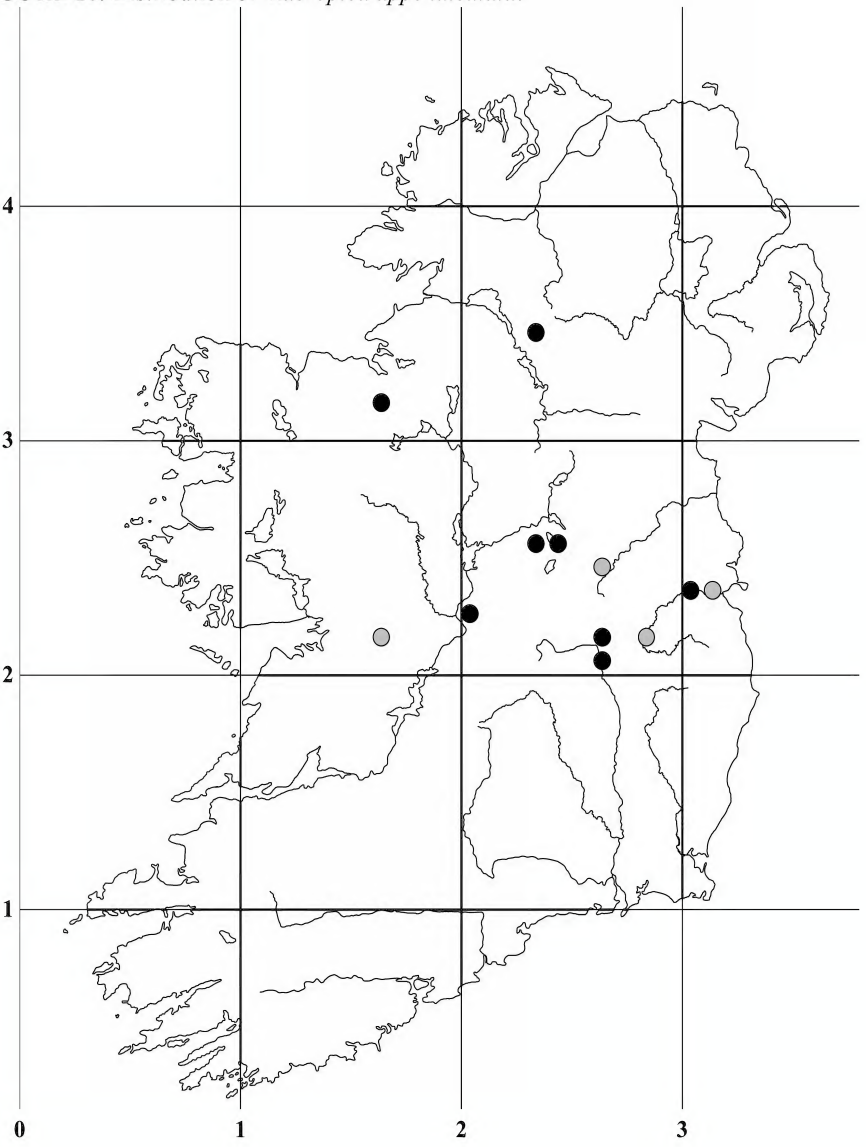


FIGURE 20. Distribution of *Macroplea appendiculata*.



Bull. Ir. biogeog. Soc. No. 31 (2007)

A NEW RECORD OF *DYTISCUS CIRCUMFLEXUS* FABRICIUS 1801, FROM CO. WATERFORD, IRELAND

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Dytiscus circumflexus (Fabricius, 1801) is a predaceous diving beetle that seems to be a well established species in the British Isles, especially in England and Wales. It is found in brackish water and large inland ponds (Friday, 1988). Even though *D. circumflexus* was first classified as a southern coastal species, recent distribution maps show a more inland and northern distribution than previously assumed, reaching some areas of Scotland and the Isle of Man (Foster and Bellstedt, 2005). In Ireland, however, there were only two records of this species to date, one from Duncormick, Co. Wexford, and another from Lough Oura, Co. Roscommon, both recorded in the summer of 1983 (O'Connor and O'Neill, 1985; Foster, pers comm.). The former was a single specimen that flew into a house on the 5th of August, 1983, presumably attracted by a light while migrating.

Aquatic macroinvertebrates were sampled from a number of Integrated Constructed Wetlands (ICWs) in the Annestown River Valley, Co. Waterford (S507026), in spring and summer 2006. ICWs are constructed ponds used mainly to treat farmyard runoff. These ponds were built in 2000 and vary in terms of their morphology, habitat heterogeneity, water quality and the extent of emergent vegetation present. Sampling was carried out using activity traps and pond netting. Activity traps were deployed for two consecutive nights, and pond netting (1mm mesh) was carried out for three-minute intervals, following the multihabitat technique recommended by the UK Pond Survey (Biggs *et al.*, 1998).

In spring 2006, a total of eight specimens of *D. circumflexus* were caught in three different treatment systems (S50600 03750, S52300 04300 and S50309 00578). Most of the specimens were caught in areas of open water and only in activity traps, even though vigorous pond net

sampling was carried out in these ponds also. Various studies suggest that activity traps may increase the probability of capture of highly mobile beetles, such as this species (e.g. Hilsenhoff, 1991; Becerra *et al*., in press). This record constitutes the second record from a waterbody in Ireland. These ponds are located close to the coastline and this could have facilitated the colonisation of the ponds by this beetle. Interestingly, *D. circumflexus* has also been collected in large numbers from an effluent treatment pond in Scotland (Foster, pers. comm.), suggesting that treatment ponds have high habitat potential for this species. Ongoing work on natural ponds in the south-east will help confirm or refute this hypothesis and better determine the habitat of *D. circumflexus*.

A voucher specimen has been deposited in the National Museum of Ireland.

Acknowledgements

This project has been funded through the European Union programme INTERREG IIIA. We are grateful to Dr Brian Nelson (Ulster Museum, Belfast) and Prof. Garth Foster for confirming the identifications of a number of beetles. We also gratefully acknowledge the help and enthusiasm given by Dr Rory Harrington, Department of Environment, Heritage and Local Government, Waterford County Council, and the constant support of Prof. Thomas Bolger, Dr Tasman Crowe, Dr Jan-Robert Baars, Dr Ronan Matson, Ciara Smith B.Sc., Dr Robert Cruikshanks, Maria Callanan, B.Sc, Siobhán McCarthy, B.Sc. and Alexia Massa-Gallucci, B. Sc. with various aspects of the project.

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Bull. Ir. biogeog. Soc. No. 31 (2007)

CONTRIBUTIONS TOWARDS A CHECKLIST OF INSECTS FEEDING ON IRISH TREES. PART 1: HYMENOPTERA, LEPIDOPTERA AND ORTHOPTERA

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The authors are compiling a checklist of the insects which feed on Irish forest trees. The definition of a tree is that used by Mitchell (1978), i.e. a woody plant that commonly achieves a height of 6m (20ft) on a single stem. This definition excludes bushes. However, we have included hazel and blackthorn as these are often popularly considered to be trees in Ireland. Part one covers the Hymenoptera, Lepidoptera and Orthoptera. The data have been compiled from published sources and from experience. The authors would welcome comments especially concerning any omissions or errors.

The following trees are included:- alders (*Alnus* spp.); apples (*Malus* spp.); Arolla pine (*Pinus cembra*); aspen (*Populus tremula*); Atlas cedar (*Cedrus atlantica*); Austrian pine (*Pinus nigra*); bay willow (*Salix pentandra*); beach pine (*Pinus contorta*); birches (*Betula* spp.); bird cherry (*Prunus padus*); black poplar (*Populus nigra*); blackthorn (*Prunus spinosa*); cherries (*Prunus* spp.); common alder (*Alnus glutinosa*); common ash (*Fraxinus excelsior*); common beech (*Fagus sylvatica*); common hazel (*Corylus avellana*); common juniper (*Juniperus communis*); common pear (*Pyrus communis*); common silver fir (*Abies alba*); common walnut (*Juglans regia*); crack willow (*Salix fragilis*); dogwoods (*Cornus* spp.); Douglas fir (*Pseudotsuga menziesii*); downy or white birch (*Betula pubescens*); elms (*Ulmus* spp.); European larch (*Larix decidua*); "false" cypresses (*Chamaecyparis* spp.); field maple (*Acer campestre*); goat willow (*Salix caprea*); grey alder (*Alnus incana*); grey willow (*Salix cinerea*); hawthorn (*Crataegus monogyna*); hawthorns (*Crataegus* spp.); holly (*Ilex aquifolium*); Holm oak (*Quercus ilex*); hornbeam (*Carpinus betulus*); horse chestnut (*Aesculus hippocastanum*);

hybrid cypresses (*Cupressocyparis*); larches (*Larix* spp.); Leyland cypress (*Cupressocyparis leylandii*); limes (*Tilia* spp.); maples (*Acer* spp.); maritime pine *(Pinus pinaster*); Monterey cypress (*Cupressus macrocarpa*); noble fir (*Abies procera*); Norway spruce (*Picea abies*); oaks (*Quercus* spp.); pears (*Pyrus* spp.); pedunculate or English oak (*Quercus robur*); pines (*Pinus* spp.); poplars (*Populus* spp.); rowan or mountain ash (*Sorbus aucuparia*); rusty willow (*Salix cinerea oleifolia*); Scots pine (*Pinus sylvestris*); silver birch (*Betula pendula*); silver firs (*Abies* spp.); Sitka spruce (*Picea sitchensis*); small-leafed lime (*Tilia cordata*); spruces (*Picea* spp.); stone pine (*Pinus pinea*); sweet bay (*Laurus nobilis*); sweet chestnut (*Castanea sativa*); sycamore (*Acer pseudoplatanus*); thujas (*Thuja* spp.); Turkey oak (*Quercus cerris*); whitebeam (*Sorbus aria*); white willow (*Salix alba*); wild cherry or gean (*Prunus avium*); wild service tree (*Sorbus torminalis*); willows (*Salix* spp.); Wych elm (*Ulmus glabra*); yew (*Taxus baccata*)

SAWFLIES (HYMENOPTERA: SYMPHYTA)

The distributional and food plant data are from O'Connor, Liston and Speight (1997) and Redfern, Shirley and Bloxham (2002). The nomenclature follows O'Connor, Nash, Fitton and Broad (in prep.).

ARGIDAE

***Arge fuscipes* (Fallén)**

Recorded from counties Cavan, Dublin and Wicklow, the larvae feed on birches.

***Arge metallica* (Klug)**

Recorded from counties Cork and Wicklow. The species has been reported from birches.

***Arge ustulata* (Linnaeus)**

A widespread species, the larvae feed on birches, hawthorns and willows.

***Sterictiphora germinata* (Gmelin)**

Recorded from counties Armagh, Carlow, Clare, Down and Dublin, the larvae feed on *inter alia* rowan.

CIMBICIDAE

***Cimbex connatus* (Schrank)**

Recorded from counties Galway and Kerry, the larvae feed on alders.

***Cimbex femoratus* (Linnaeus)**

A widespread species, the larvae feed on birches.

***Trichiosoma lucorum* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* silver birch and downy birch.

***Trichiosoma sorbi* Hartig**

Recorded from counties Down, Tipperary and Tyrone, the larvae feed on rowan.

***Trichiosoma tibiale* Stephens**

Recorded from county Cavan, the larvae feed on common hawthorn.

***Trichiosoma vitellinae* (Linnaeus)**

Recorded from counties Antrim and Down. The host may be birches but there are old records from willows.

DIPRIONIDAE

***Diprion pini* (Linnaeus)**

A widespread species, the larvae feed on several species of pine. Popularly known as the Pine Sawfly.

***Monoctenus juniperi* (Linnaeus)**

Recorded from county Galway, the larvae feed *inter alia* on common juniper.

***Neodiprion sertifer* (Geoffroy)**

Recorded from counties Mayo, Westmeath and Wicklow, the larvae feed on pines. Popularly known as the Fox-coloured Sawfly or the Lesser Pine Sawfly.

PAMPHILIDAE

***Pamphilius gyllenhali* (Dahlbom)**

Recorded from counties Laois and Wicklow, the larvae feed on *inter alia* goat willow.

***Pamphilius pallipes* (Zetterstedt)**

Recorded from counties Cavan and Down, the larvae feed on birches.

***Pamphilius sylvaticus* (Linnaeus)**

Recorded from counties Down, Kildare, Tyrone and Wicklow, the larvae feed on hawthorns, cherries, rowan and other *Sorbus* spp.

***Pamphilius vafer* (Linnaeus)**

Recorded from county Roscommon, the larvae feed on alders.

***Pamphilius varius* (Lepeletier)**

Recorded from counties Dublin and Wicklow, the larvae feed on grey alder and birches.

SIRICIDAE

***Sirex cyaneus* Fabricius**

Recorded from counties Antrim, Derry and Dublin, the larvae feed on silver firs, larches, spruces, pines and Douglas fir. It has been predicted that *S. cyaneus* will spread in silver fir forests in Ireland. Popularly known as a Steel-blue Wood Wasp.

***Sirex noctilio* Fabricius**

Imported into Dublin with similar but uncertain records from elswhere on the island. Not known to be established here, the larvae feed on silver firs, larches, spruces, pines and Douglas fir. Popularly known as a Steel-blue Wood Wasp.

***Urocerus augur* (Klug)**

Recorded from county Kerry, the larvae feed on common silver fir, noble fir, Norway spruce and Scots pine. The Irish populations probably originated from infested timber imported from continental Europe (Kirk, 1975).

***Urocerus gigas* (Linnaeus)**

A widespread species, the larvae feed on Coniferae (firs, larches, spruces and pines). In Ireland, *U. gigas* has been reared from eight species of conifer. Some very heavy attacks rendered fallen timber and cut logs useless for constructional and pulping purposes with up to 100 galleries and exit holes per metre length of timber. Popularly known as the Giant Wood Wasp.

***Xeris spectrum* (Linnaeus)**

Imported into Dublin. Not known to be established here, the species feeds on silver firs,

"false" cypresses, larches, spruces, pines and Douglas fir.

TENTHREDINIDAE

***Allantus cingulatus* (Scopoli)**

Recorded from county Laois, the larvae feed on *inter alia* birches and common hazel.

***Amauronematus amplus* Konow**

Recorded from counties Cavan and Wicklow, the larvae feed on silver birch.

***Amauronematus fasciatus* Konow**

Recorded from counties Cavan and Kildare, the larvae feed on goat willow and crack willow.

***Amauronematus hedstroemi* Malaise**

Recorded from counties Cavan and Kerry, the species has been reared from larvae on grey willow.

***Amauronematus histrio* (Lepeletier)**

Recorded from counties Antrim, Cavan, Dublin and Wicklow, the species has been reared from larvae on goat willow, rusty willow and crack willow.

***Amauronematus lateralis* Konow**

Recorded from counties Cavan, Dublin, Leitrim and Wicklow, the larvae feed on rusty willow.

***Amauronematus sagmarius* Konow**

Recorded from counties Cavan and Wicklow, the larvae feed on rusty willow.

***Amauronematus stenogaster* (Förster)**

Synonym *Amauronematus fallax* (Lepeletier)

A widespread species, the larvae feed on willows.

***Amauronematus tunicatus* (Zaddach)**

Recorded from counties Antrim and Wicklow, the larvae feed on *inter alia* rusty willow.

***Ametastegia albipes* (Thomson)**

Recorded from Cavan, Kerry and Wexford. The species feeds on *inter alia* aspen.

***Ametastegia perla* (Klug)**

Recorded from county Sligo, the larvae feed on *inter alia* poplars, oaks and willows.

***Ametastegia viduatus* (Zetterstedt)**

A widespread species, the larvae feed on *inter alia* rusty willow and goat willow.

***Anoplonyx destructor* Benson**

Recorded from counties Antrim, Donegal, Tyrone and Wicklow, the larvae feed on larches. Popularly known as Benson's Larch Sawfly.

***Apethymus filiformis* (Klug)**

Recorded from counties Armagh, Down, Westmeath and Wicklow, the larvae feed on oaks.

***Apethymus serotinus* (Müller)**

Recorded from counties Kerry and Wicklow, the larvae feed on oaks.

***Caliroa annulipes* (Klug)**

Recorded from counties Cavan, Down, Mayo, Wexford and Wicklow, the larvae feed on *inter alia* birches, hawthorns, common beech, cherries, oaks, willows and limes. Popularly known as the Oak Slugworm.

***Caliroa cerasi* (Linnaeus)**

Recorded from counties Cork, Kerry and Tipperary, the larvae feed on *inter alia* hawthorns, apples, cherries, pears, oaks and willows. Popularly known as the Pear Slug Sawfly or Pear and Cherry Sawfly.

***Caliroa varipes* (Klug)**

Recorded from county Donegal, the larvae feed on birches, oaks and willows.

***Cladius grandis* (Lepeletier)**

Recorded from counties Dublin, Kerry and Kildare, the larvae feed on poplars and willows.

***Cladius pallipes* Lepeletier**

A widespread species, the larvae feed on *inter alia* common hazel, hawthorns, sweet bay laurel, cherries, rowan and other *Sorbus* spp. Popularly known as the Plum Leaf Sawfly.

***Cladius pilicornis* (Curtis)**

A widespread species, the larvae feed on hawthorns.

***Cladius rufipes* Lepeletier**

Recorded from counties Down, Dublin, Kerry, Kildare, Mayo and Wicklow, the larvae feed on elms.

***Cladius ulmi* (Linnaeus)**

Recorded from counties Dublin and Wicklow, the larvae feed on elms.

***Craesus alniastri* (Scharfenberg)**

Recorded from counties Cavan, Leitrim and Wicklow, the species has been reared from larvae on alders.

***Craesus latipes* (Villaret)**

Recorded from counties Cavan, Kerry, Longford, Tipperary, Wexford and Wicklow, the larvae feed on birches.

***Craesus septentrionalis* (Linnaeus)**

A widespread species, the larvae feed on alders, birches, common hazel and poplars. Popularly known as the Hazel Sawfly.

***Dineura stilata* (Klug)**

A widespread species, the larvae feed on hawthorns.

***Dineura testaceipes* (Klug)**

A widespread species, the larvae feed on rowan and wild service tree.

***Dineura viridiborsata* (Retzius in DeGeer)**

A widespread species which has been reared from birches.

***Empria immersa* (Klug)**

A widespread species, the larvae feed on willows.

***Eriocampa ovata* (Linnaeus)**

A widespread species, the larvae feed on alders.

***Euura amerinae* (Linnaeus)**

Recorded from county Cork, the larvae feed on bay willow and other willows, causing galls in twigs or stems.

***Euura mucronata* (Hartig)**

A widespread species, the larvae feed on willows. Popularly known as the Willow Bud Sawfly.

***Fenusa dohrnii* (Tischbein)**

Recorded from counties Cavan, Dublin, Kildare, Roscommon, Sligo, Tipperary, Wexford and Wicklow, the larvae feed on alders.

***Fenusa pumila* Leach**

A widespread species in the southern half of Ireland, the larvae feed on birches but preferring downy birch.

***Fenusella hortulana* (Klug)**

Recorded from county Dublin, the larvae feed on black poplar.

***Fenusella nana* (Klug)**

Recorded from counties Cavan and Mayo, the larvae feed on downy birch.

***Harpiphorus lepidus* (Klug)**

Recorded from counties Kerry and Wicklow, the larvae feed on oaks.

***Hemichroa australis* (Lepeletier)**

Recorded from counties Cavan, Down, Dublin, Kerry, Leitrim and Wicklow, the larvae feed on alders and birches.

***Hemichroa crocea* (Fourcroy)**

Recorded from counties Antrim, Cavan, Clare, Dublin, Kerry and Leitrim, the larvae feed on silver birch but common hazel is also used but rarely.

***Heterarthrus aceris* (Kaltenbach)**

Recorded from counties Dublin, Kildare and Tyrone, the larvae feed on sycamore.

***Heterarthrus microcephalus* (Klug)**

Recorded from counties Kerry and Laois, the larvae feed on goat willow.

***Heterarthrus nemoratus* (Fallén)**

Recorded from county Cavan, the larvae feed on birches.

***Heterarthrus vagans* (Fallén)**

A widespread species, the larvae feed on alders.

***Hoplocampa alpina* (Zetterstedt)**

Recorded from county Westmeath, the larvae feed on rowan.

***Hoplocampa chrysorrhoea* (Klug)**

Recorded from counties Cavan, Clare, Dublin, Kildare and Wexford, the larvae feed on cherries particularly wild cherry and blackthorn, and less on the domestic species.

***Hoplocampa crataegi* (Klug)**

Recorded from counties Armagh, Carlow, Cavan, Dublin, Kildare and Wicklow, the larvae feed on hawthorns.

***Hoplocampa flava* (Linnaeus)**

Recorded from county Cavan, the larvae feed on *inter alia* blackthorn. Popularly known as the Plum Sawfly.

***Hoplocampa fulvicornis* (Panzer)**

Recorded from counties Cavan, Kerry and Wexford, the larvae feed mainly on blackthorn and is less common on other *Prunus* spp.

***Hoplocampa pectoralis* Thomson**

Recorded from counties Cavan, Dublin, Kerry, Kildare, Laois and Wicklow, the larvae feed on hawthorns.

***Macrophya punctumalbum* (Linnaeus)**

Recorded from counties Carlow, Dublin, Laois, Roscommon and Wicklow, the larvae feed on *inter alia* common ash.

***Mesoneura opaca* (Fabricius)**

Recorded from counties Dublin and Kilkenny, the larvae feed on pedunculate oak.

***Monsoma pulveratum* (Retzius in DeGeer)**

A widespread species, the larvae feed on alders and willows.

***Nematinus acuminatus* (Thomson)**

Recorded from county Cavan, the larvae apparently feeds on birches and rarely on common hazel.

***Nematinus caledonicus* (Cameron)**

Recorded from county Down, the larvae feed on birches.

***Nematinus fuscipennis* (Lepeletier)**

A widespread species, the larvae feed on alders.

***Nematinus luteus* (Panzer)**

Synonymy *Nematinus willigkiae* R. von Stein

Recorded from counties Cavan, Donegal, Dublin, Fermanagh, Kerry, Waterford, Westmeath and Wicklow, the species has been bred from larvae on alders and birches.

***Nematus bergmanni* Dahlbom**

A widespread species which has been reared from larvae on willows.

***Nematus brevivalvis* Thomson**

Recorded from county Dublin, the larvae feed on birches.

***Nematus cadderensis* Cameron**

Recorded from county Antrim, the larvae feed on birches, aspen and willows.

***Nematus ferrugineus* Förster**

A widespread species which has been bred from larvae on *inter alia* grey willow, bay willow and crack willow.

***Nematus flavescens* Stephens**

Recorded from counties Cavan, Dublin, Laois, Roscommon, Tyrone and Wicklow, the larvae feed on rusty willow and grey willow.

***Nematus frenalis* Thomson**

Recorded from county Dublin, the larvae feed on willows.

***Nematus hypoxanthus* Förster**

A widespread species, the larvae feed on poplars and willows.

***Nematus incompletus* Förster**

A widespread species, the larvae feed on aspen and grey willow.

***Nematus lucidus* Panzer**

A widespread species, the larvae feed on hawthorns and blackthorn. Occasionally, cultivated

Prunus is eaten.

***Nematus melanaspis* Hartig**

A widespread species, the larvae feed on birches. It also has been reared from larvae on *inter alia* grey willow and aspen. Popularly known as the Gregarious Poplar Sawfly.

***Nematus melanocephalus* Hartig**

Recorded from county Cavan, the larvae feed on birches, common hazel, white willow, poplars and elms.

***Nematus miliaris* (Panzer)**

A widespread species, the larvae feed mainly on willows but alders, birches and poplars are also sometimes used.

***Nematus nigricornis* Lepeletier**

Recorded from county Cavan, the larvae feed on silver birch, aspen and willows.

***Nematus oligospilus* Förster**

A widespread species which has been reared from larvae on goat willow, grey willow and bay willow.

***Nematus pavidus* Lepeletier**

A widespread species which has been reared from larvae on goat willow, grey willow, black poplar and aspen. It also feeds on alders. Popularly known as the Lesser Willow Sawfly.

***Nematus poecilonotus* Zaddach**

Recorded from counties Cavan and Roscommon, the larvae feed on birches.

***Nematus umbratus* Thomson**

Recorded from county Cork, the larvae feed on alders, birches, common hazel and elms.

***Nematus vicinus* Serville**

Synonym *Nematus longispinus* Kriechbaumer

Recorded from counties Dublin, Tipperary and Wexford, the larvae feed on *inter alia* birches, poplars and willows.

***Nematus viridis* Stephens**

Recorded from counties Cavan, Westmeath and Wicklow, the larvae feed on birches.

***Nematus viridissimus* Möller**

Recorded from counties Antrim, Cavan, Dublin, Kildare, Mayo and Wicklow, the larvae feed on alders.

***Pachynematus montanum* (Zaddach)**

Recorded from counties Fermanagh and Tyrone, the larvae feed on spruces.

***Pachynematus scutellatum* (Hartig)**

Recorded from county Wicklow, the larvae feed on spruces.

***Pachyprotasis antennata* (Klug)**

A widespread species, the larvae feed on *inter alia* alders, common ash and goat willow.

***Pachyprotasis rapae* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* common hazel, common ash and oaks.

***Pareophora pruni* (Linnaeus)**

Recorded from county Tyrone, the larvae feed on blackthorn.

***Periclista albida* (Klug)**

Recorded from county Cavan, the larvae feed on oaks.

***Phyllocolpa coriacea* (Benson)**

Recorded from county Wicklow, the larvae feed on *inter alia* rusty willow and grey willow.

***Phyllocolpa excavata* (Marlatt)**

Recorded from county Cavan, the larvae feed on *inter alia* bay willow.

***Phyllocolpa leucapsis* (Tischbein)**

Recorded from counties Antrim, Cavan, Roscommon, Tyrone, Wexford and Wicklow, the larvae feed on *inter alia* goat willow and grey willow.

***Phyllocolpa leucosticha* (Hartig)**

A widespread species, the larvae feed on *inter alia* goat willow and grey willow.

***Platycampus luridiventris* (Fallén)**

Recorded from counties Antrim, Cavan, Kerry, Kildare and Wicklow, the larvae feed on common alder.

***Pontania bridgmanii* (Cameron)**

Recorded from counties Cavan, Dublin, Wexford and Wicklow. This gall-causing species occurs on *inter alia* rusty willow, goat willow and grey willow.

***Pontania pedunculi* (Hartig)**

Recorded from counties Cavan, Donegal, Kildare, Mayo, Monaghan and Wicklow, the larvae feed on on willows, causing galls on the leaves. Popularly known as a Willow Pea-gall Sawfly.

***Pontania proxima* (Lepeletier)**

Recorded from counties Antrim, Cavan and Dublin, the larvae feed on *inter alia* white willow and crack willow, causing galls on the leaves. Popularly known as the Willow Bean-gall Sawfly.

***Pontania tuberculata* (Benson)**

Recorded from county Cavan, the larvae feed on *inter alia* goat willow and grey willow, causing galls on the leaves.

***Pontania viminalis* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* grey willow and crack willow, causing galls on leaves. Popularly known as a Willow Pea-gall Sawfly.

***Pristiphora abietina* (Christ)**

Recorded from counties Armagh, Dublin, Laois, Wexford and Wicklow, the larvae feed on spruces. Popularly known as the Gregarious Spruce Sawfly.

***Pristiphora aphantoneura* (Förster)**

A widespread species, the larvae feed on willows.

***Pristiphora armata* (Thomson)**

Recorded from counties Cavan, Down, Dublin and Kildare, the larvae feed on hawthorns.

***Pristiphora biscalis* (Förster)**

Recorded from counties Cavan, Down and Wicklow, the larvae feed on blackthorn.

***Pristiphora cincta* Newman**

Recorded from counties Antrim, Cavan, Dublin, Tipperary and Wicklow, the larvae feed on

inter alia birches.

***Pristiphora erichsonii* (Hartig)**

Recorded from county Wicklow, the larvae feed on larches. Popularly known as the Larch Sawfly.

***Pristiphora laricis* (Hartig)**

Recorded from counties Antrim, Down and Dublin, the larvae feed on larches. Popularly known as the Small Larch Sawfly.

***Pristiphora luteipes* Lindqvist**

Recorded from counties Dublin, Sligo and Wicklow, the larvae feed on willows.

***Pristiphora melanocarpa* (Hartig)**

A widespread species, the larvae feed on birches.

***Pristiphora monogyniae* (Hartig)**

Recorded from counties Cavan and Dublin, the larvae feed on blackthorn and occasionally domestic cherries.

***Pristiphora ruficornis* (Olivier)**

A widespread species, the larvae feed on birches.

***Pristiphora testacea* (Jurine)**

Recorded from counties Armagh, Cavan, Dublin and Kildare, the species has been reared from larvae on birches.

***Pristiphora wesmaeli* (Tischbein)**

Recorded from county Dublin, the larvae feed on larches. Popularly known as the Larch Sawfly.

***Profenusa pygmaea* (Klug)**

Recorded from counties Carlow, Dublin, Kerry, Kildare and Wicklow, the larvae feed on oaks.

***Rhogogaster viridis* (Linnaeus)**

A widespread species, the larvae feed *inter alia* on alders, poplars, oaks and willows.

***Sharliphora nigella* (Förster)**

Recorded from county Tyrone, the larvae feed on spruces.

***Tenthredo balteata* Klug**

A widespread species, the larvae feed on *inter alia* rowan.

***Tenthredo colon* Klug**

A widespread species, the larvae feed on *inter alia* willows.

***Tenthredo ferruginea* Schrank**

A widespread species, the larvae feed on *inter alia* alders, cherries, willows, rowan and other *Sorbus* spp.

***Tenthredo livida* Linnaeus**

A widespread species, the larvae feed on *inter alia* hornbeam, common hazel, common ash, willows, rowan and other *Sorbus* spp.

***Tenthredo mesomela* Linnaeus**

A widespread species, the larvae feed on *inter alia* willows.

XYLELIDAE

***Xyela julii* (Brébisson)**

Recorded from counties Dublin, Laois and Wicklow, the larvae feed on Arolla pine, Austrian pine and Scots pine.

GALL WASPS (HYMENOPTERA: CYNIPIDAE)

The data are from O'Connor *et al.* (1995) and O'Connor (2004a). The nomenclature follows O'Connor, Nash, Fitton and Broad (in prep.).

***Andricus callidoma* (Hartig)**

Recorded from county Kerry. The species causes bud and catkin galls on native oaks.

***Andricus corruptrix* (Schlechtendal)**

Recorded from counties Dublin and Kerry. An alien invading species which causes galls on native oaks. Small bud galls also occur on Turkey oak.

***Andricus curvator* Hartig**

A widespread species which causes bud and leaf galls on native oaks.

***Andricus foecundatrix* (Hartig)**

Synonymy *Andricus fecundator* (Hartig)

A widespread species which causes catkin galls and also artichoke or hop galls on native oaks.

***Andricus glandulae* (Hartig)**

Recorded from counties Cork and Kerry. The species causes bud and catkin galls on native oaks.

***Andricus inflator* (Hartig)**

A widespread species which causes bud galls and also galls on the twigs of native oaks. Popularly known as the Oak Bud Globular-gall Cynipid.

***Andricus kollari* (Hartig)**

A widespread species which causes marble galls on native oaks. Small bud galls also occur on Turkey oak.

***Andricus legitimus* Wiebes-Rijks**

Recorded from counties Kerry and Wicklow. The species causes galls in the acorns of native oaks.

***Andricus lignicola* (Hartig)**

A widespread species which causes cola-nut galls on native oaks. Small bud galls also occur on Turkey oak. One of the alien invading group.

***Andricus malpighii* (Adler, 1881)**

Synonymy *Andricus nudus* Adler

Recorded fron county Dublin. The species causes bud and catkin galls on oaks.

***Andricus paradoxus* (Radoszkowski, 1866)**

Synonym *Andricus albopunctatus* (Schlechtendal)

Recorded from counties Cavan, Kerry and Sligo. The species causes bud galls on native oaks.

***Andricus quadrilineatus* Hartig**

Recorded from counties Cork and Kerry. The species causes catkin and leaf galls on oaks.

***Andricus quercuscalicis* (Burgsdorf)**

A widespread species which causes knopper galls on the acorns of oaks and catkin galls on Turkey oak. One of the invading group.

***Andricus quercuscorticis* (Linnaeus)**

A widespread species which causes bud galls and also buds embedded in the bark (usually in callus) of oaks.

***Andricus quercusradicis* (Fabricius)**

A widespread species which causes leaf stalk or midrib galls, twig galls and also truffle galls usually on the trunks of oaks.

***Andricus quercusramuli* (Linnaeus)**

Recorded from counties Dublin, Laois and Meath. The species causes bud galls and also cottonwool galls on the catkins of oaks.

***Andricus solitarius* (Fonscolombe)**

Recorded from counties Derry, Kerry and Wexford. The species causes bud and catkin galls on oaks.

***Biorhiza pallida* (Olivier)**

Recorded from counties Antrim, Down, Dublin, Mayo, Offaly and Westmeath. The species causes galls on the underground roots and also oak apples on oaks.

***Cynips agama* Hartig**

A widespread species which causes pea-like galls on the leaves of oaks.

***Cynips disticha* Hartig**

A widespread species which causes red wart galls and also globular galls on the leaves of oaks.

***Cynips divisa* Hartig**

A widespread species which causes red wart galls and also pea galls on the leaves of oaks.

***Cynips longiventris* Hartig**

A widespread species which causes bud galls and also striped pea galls on the leaves of oaks.

***Cynips quercusfolii* Linnaeus**

A widespread species which causes bud galls and also cherry galls on the leaves of oaks.

***Neuroterus albipes* (Schenck)**

A widespread species which causes leaf and catkin galls, including smooth spangle galls on the leaves of oaks.

***Neuroterus anthracina* (Curtis)**

A widespread species which causes bud galls and oyster galls on the leaves of native oaks.

***Neuroterus numismalis* (Geoffroy)**

A widespread species which causes blister leaf galls and silk-button galls on the leaves of oaks.

***Neuroterus politus* Hartig**

Synonym *Neuroterus aprilinus* (Giraud)

A widespread species which causes bud and catkin galls on oaks.

***Neuroterus quercusbaccarum* (Linnaeus)**

A widespread species which causes currant galls on catkins, currant galls and common spangle galls on the leaves of oaks.

***Neuroterus tricolor* (Hartig)**

Recorded from counties Dublin, Galway, Kerry, Kildare, Mayo, Waterford and Wicklow. The species causes cupped spangle galls on the leaves of oaks.

***Trigonaspis megaptera* (Panzer)**

A widespread species which causes galls in buds, on trunks and stems of oaks, often on saplings.

CHALCIDS (CHALCIDOIDEA)

The data are from Bouček (1970), O'Connor (2003, 2004b) and O'Connor, Nash and

Bouček (2000). The nomenclature follows O'Connor, Nash, Fitton and Broad (in prep.).

TORYMIDAE

***Megastigmus pictus* (Förster)**

Recorded from counties Dublin and Wicklow, the larvae feed in the seeds of European larch.

***Megastigmus pinus* Parfitt**

Recorded from county Wexford, the larvae feed in the seeds of noble fir. Popularly known as the Silver Fir Seed Wasp.

***Megastigmus spermotrophus* Wachtl**

Recorded from counties Down, Dublin and Wicklow, the larvae feed in the seeds of Douglas fir. Popularly known as the Douglas Fir Seed Wasp or Douglas Fir Seedfly.

***Megastigmus strobilobius* Ratzeburg**

Recorded from county Wicklow, the larvae feed in the seeds of *inter alia* firs and spruces.

***Megastigmus suspectus* Borries**

Recorded from counties Dublin and Wicklow, the larvae feed in the seeds of European firs and the Atlas cedar.

LEPIDOPTERA

The distributional and food-plant data are from Baynes (1964); Beirne (1941); Bond (1984, 1995); Bond, Nash and O'Connor (2006); Bradley (2000); Bradley, Tremewan and Smith (1973, 1979); Emmet (1981, 1991); Emmet and Heath (1979, 1989); Heath and Emmet (1983) and Thompson and Nelson (2006).

ADELIDAE

***Adela croesella* (Scopoli)**

Recorded from county Clare, the larvae feed on shrubs and leaf-litter.

***Adela cuprella* (Denis and Schiffermüller)**

Recorded from counties Clare, Kildare and Meath, the larvae feed on willows.

***Adela reaumurella* (Linnaeus)**

Recorded from counties Cork, Dublin, Fermanagh, Sligo, Tipperary and Wicklow, the larvae

feed on oaks and leaf-litter.

***Nemophora degeerella* (Linnaeus)**

Recorded from counties Antrim, Carlow, Cork, Kerry and Tyrone, the larvae feed on dead leaves.

***Nematopogon metaxella* (Hübner)**

Recorded from counties Antrim, Clare, Cork and Galway, the larvae feed on dead and decaying leaves.

***Nematopogon swammerdamella* (Linnaeus)**

A widespread species, the larvae feed on dead leaves.

BATRACHEDRIDAE

***Batrachedra praeangusta* (Haworth)**

A widespread species, the larvae feed on the catkins and leaves of poplars and willows.

BUCCULATRICIDAE

***Bucculatrix albedinella* Zeller**

Recorded from county Tipperary, the larvae feed on elms.

***Bucculatrix bechsteinella* (Bechstein and Scharfenberg)**

Recorded from counties Cork and Dublin, the larvae feed on hawthorns, apples, pears, rowan and other *Sorbus* spp.

***Bucculatrix cidarella* Zeller**

Recorded from counties Cork, Dublin, Kerry, Westmeath and Wicklow, the larvae feed on *inter alia* common alder.

***Bucculatrix ulmella* Zeller**

Recorded from county Wicklow, the larvae feed on oaks.

COLEOPHORIDAE

***Coleophora albidella* (Denis and Schiffermüller)**

Recorded from counties Clare, Galway and Wicklow, the larvae feed on willows.

***Coleophora anatipennella* (Hübner)**

Recorded from county Clare, the larvae feed on rosaceous trees. Popularly known as the

Pistol Case-Bearer.

***Coleophora betulella* Heinemann and Wocke**

Recorded from county Clare, the larvae feed on birches.

***Coleophora binderella* (Kollar)**

Recorded from county Kerry, the larvae feed on alders, common hazel, hornbeam and birches.

***Coleophora flavipennella* (Duponchel)**

Recorded from counties Cork, Dublin, Kerry, Wexford and Wicklow, the larvae feed on oaks.

***Coleophora fuscocuprella* Herrich-Schäffer**

Recorded from county Clare, the larvae feed on common hazel and birches.

***Coleophora ibipennella* Zeller**

Recorded from county Cork, the larvae feed on oaks and possibly birch.

***Coleophora laricella* (Hübner)**

A widespread species occurring in the north, south-west and west of Ireland, the larvae feed on larches. Popularly known as the Larch Case-Bearer.

***Coleophora lusciniaepennella* (Treitschke)**

A widespread species, the larvae feed on *inter alia* willows and birches.

***Coleophora lutipennella* (Zeller)**

Recorded from county Cork, the larvae feed on oaks.

***Coleophora milvipennis* Zeller**

Recorded from county Offaly, the larvae feed on birches.

***Coleophora orbitella* Zeller**

Recorded from counties Clare and Kerry, the larvae feed on birches and alders.

***Coleophora serratella* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees.

***Coleophora spinella* (Schrank)**

A widespread species in the southern half of Ireland, the larvae feed on rosaceous trees and

bushes. Popularly known as the Apple and Plum Case-Bearer.

COSMOPTERIGIDAE

***Blastodacna atra* (Haworth)**

A widespread species, the larvae feed in the flowers and leaf-buds of apples. Popularly known as the Apple Pith Moth.

***Blastodacna hellerella* (Duponchel)**

Recorded from counties Clare, Cork and Meath, the larvae feed on the fruit of hawthorns.

***Spuleria flavicaput* (Haworth)**

A widespread species, the larvae feed on the twigs of hawthorns.

COSSIDAE

***Cossus cossus* (Linnaeus)**

A widespread but uncommon species in the southern half of Ireland, the larvae feed on deciduous trees, tunnelling in the trunks. Popularly known as the Goat Moth.

***Zeuzera pyrina* (Linnaeus)**

Recorded from county Mayo, the larvae feed on deciduous trees and shrubs, in the stems and branches. Popularly known as the Leopard Moth.

DREPANIDAE

***Achyla flavicornis* (Linnaeus)**

A widespread species, the larvae feed on birches. Popularly known as the Yellow Horned.

***Cilix glaucata* (Scopoli)**

A widespread species but recorded mainly from the northern half of Ireland. The larvae feed on rosaceous trees particularly hawthorns and blackthorn. Popularly known as the Chinese Character.

***Drepana falcataria* (Linnaeus)**

A widespread but uncommon species. The larvae feed on birches and possibly common alder. Popularly known as the Pebble Hook-tip.

***Falcaria lacertinaria* (Linnaeus)**

A widespread species, the larvae feed on birches. Popularly known as the Scalloped Hook-

tip.

***Ochropacha duplaris* (Linnaeus)**

A rare species. The recorded counties include Armagh, Clare and Kerry. The larvae feed on birches and sometimes common alder, hazel and oaks. Popularly known as the Common Lutestring.

***Tethea or* (Denis and Schiffermüller)**

A widespread species, the larvae feed on aspen and other poplars. Popularly known as the Poplar Lutestring.

***Tetheella fluctuosa* (Hübner)**

A rare species. The recorded counties include Galway, Kerry, Mayo, Sligo and Waterford. The larvae feed on birches. Popularly known as the Satin Lutestring.

ERIOCRANIIDAE

***Eriocrania chrysolepidella* Zeller**

Recorded from county Clare, the larvae mine the leaves of hornbeam and hazel.

***Eriocrania cicatricella* (Zetterstedt)**

Recorded from counties Kildare, Meath, Westmeath and Wicklow, the larvae mine the leaves of birches.

***Eriocrania salopiella* (Stainton)**

Recorded from counties Armagh, Cork, Meath, Westmeath and Wicklow, the larvae mine the leaves of birches.

***Eriocrania sangii* (Wood)**

Recorded from counties Dublin, Kerry, Meath and Offaly, the larvae mine the leaves of birches.

***Eriocrania semipurpurella* (Stephens)**

Recorded from counties Dublin, Galway, Kerry, Offaly and Wicklow, the larvae mine the leaves of birches.

***Eriocrania sparrmannella* (Bosc)**

Recorded from counties Fermanagh, Westmeath and Wicklow, the larvae mine the leaves of

birches.

***Eriocrania subpurpurella* (Haworth)**

A widespread species, the larvae mine the leaves of oaks.

***Eriocrania unimaculella* (Zetterstedt)**

Recorded from counties Longford, Offaly and Wicklow, the larvae mine the leaves of birches.

GELECHIIDAE

***Anacampsis populella* (Clerck)**

Recorded from counties Antrim and Kerry, the larvae feed on aspen and willows.

***Carpatolechia decorella* (Haworth)**

Recorded from the east, north and south of Ireland, the larvae feed on oaks and dogwoods.

***Carpatolechia fugitivella* (Zeller)**

Recorded from counties Antrim, Cork, Dubkin and Sligo. The larvae feed on elms.

***Carpatolechia notatella* (Hübner)**

Recorded from counties Cavan, Clare and Galway, the larvae feed on willows.

***Carpatolechia proximella* (Hübner)**

A widespread species, the larvae feed on birches and common alder.

***Dichomeris marginella* (Fabricius)**

Recorded from county Clare, the larvae feed on common juniper and its cultivars. Popularly known as the Juniper Webber.

***Exoteleia dodecella* (Linnaeus)**

A widespread species, the larvae feed on Scots pine.

***Gelechia rhombella* (Denis and Schiffermüller)**

Recorded from counties Dublin and Wicklow, the larvae feed on apples.

***Gelechia sororculella* (Hübner)**

A widespread species, the larvae feed on willows.

***Hypatima rhomboidella* (Linnaeus)**

A widespread species, the larvae feed on birches and common hazel.

***Pseudotelphusa paripunctella* (Thunberg)**

The species has been recorded from counties Clare, Galway and Kerry. The larvae feed on *inter alia* oaks.

***Stenolechia gemmella* (Linnaeus)**

A widespread species, the larvae feed on oaks.

***Teleiodes vulgella* (Denis and Schiffermüller)**

The species has been recorded from counties Antrim, Clare, Dublin, Tipperary and Wicklow. The larvae feed on *inter alia* hawthorns and blackthorn.

***Teleiodes wagae* (Nowicki)**

Recorded from counties Clare, Galway and Offaly, the larvae feed on common hazel, birches and sweet chestnut.

GEOMETRIDAE

***Abraxas sylvata* (Scopoli)**

A rare species. The recorded counties include Carlow, Down, Kerry and Wicklow. The larvae feed on elms particulary Wych elm. Popularly known as the Clouded Magpie.

***Aethalura punctulata* (Denis and Schiffermüller)**

A rare but widespread species. The larvae feed on birches and sometimes common alder. Popularly known as the Grey Birch.

***Agriopis aurantiaria* (Hübner)**

A rare species. The recorded counties include Derry, Donegal, Down, Fermanagh, Monaghan and Tyrone. The larvae feed on deciduous trees. Popularly known as the Scarce Umber.

***Agriopis leucophaearia* (Denis and Schiffermüller)**

Recorded from county Wicklow. The larvae feed on oaks and sometimes apples. Popularly known as the Spring Usher.

***Agriopis marginaria* (Fabricius)**

A widespread species, the larvae feed on deciduous trees and bushes. Popularly known as the Dotted Border.

***Alcis repandata* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* deciduous trees and shrubs. Popularly known as the Mottled Beauty.

***Alsophila aescularia* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* apples, plum and cherries, hawthorn and other deciduous trees. Popularly known as the March Moth.

***Angerona prunaria* (Linnaeus)**

A rare but widespread species in the southern half of Ireland. The larvae feed on *inter alia* deciduous trees and bushes. Popularly known as the Orange Moth.

***Apeira syringaria* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* common ash. Popularly known as the Lilac Beauty.

***Asthena albulata* (Hufnagel)**

A rare but widespread species. The larvae feed on common hazel, hornbeam and birches. Popularly known as the Small White Wave.

***Biston betularia* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* deciduous trees. Popularly known as the Peppered Moth.

***Biston strataria* (Hufnagel)**

A widespread species, the larvae feed on deciduous trees. Popularly known as the Oak Beauty.

***Bupalus piniaria* (Linnaeus)**

A rare but widespread species. The larvae feed on Pinaceae particularly Scots pine and Austrian pine. Popularly known as the Bordered White.

***Cabera exanthemata* (Scopoli)**

A widespread species, the larvae feed on willows and aspen. Popularly known as the Common Wave.

***Cabera pusaria* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees and shrubs particularly birches. Popularly known as the Common White Wave.

***Campaea margaritata* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees. Popularly known as the Light Emerald.

***Cepphis advenaria* (Hübner)**

A rare species. The recorded counties include Limerick and Tipperary. The larvae feed on *inter alia* dogwoods. Popularly known as the Little Thorn.

***Chloroclysta citrata* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* willows and birches. Popularly known as the Dark Marbled Carpet.

***Chloroclysta miata* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees particularly willows, alders, birches and rowan. Popularly known as the Autumn Green Carpet.

***Chloroclysta siterata* (Hufnagel)**

A widespread species, the larvae feed on deciduous trees particularly oaks and rowan. Popularly known as the Red-Green Carpet.

***Chloroclysta truncata* (Hufnagel)**

A widespread species, the larvae feed on *inter alia* deciduous trees and bushes. Popularly known as the Common Marbled Carpet.

***Cleora cinctaria* (Denis and Schiffermüller)**

A rare but widespread species. The larvae feed on *inter alia* birches. Popularly known as the Ringed Carpet.

***Colotois pennaria* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees and bushes. Popularly known as the Feathered Thorn.

***Crocallis elinguaria* (Linnaeus)**

A widespread species, the larvae live on deciduous trees and bushes. Popularly known as the Scalloped Oak.

***Cyclophora albipunctata* (Hufnagel)**

A widespread species, the larvae feed on birches. Popularly known as the Birch Mocha.

***Cyclophora linearia* (Hübner)**

A rare species. The recorded counties include Cork and Wicklow. The larvae feed on common beech. Popularly known as the Clay Triple-lines.

***Cyclophora punctaria* (Linnaeus)**

A rare species. The recorded counties include Cork, Galway, Kerry, Kildare and Wicklow. The larvae feed on oaks. Popularly known as the Maiden's Blush.

***Cyclophora puppillaria* (Hübner)**

Recorded from county Cork, the larvae feed on oaks. Popularly known as Blair's Mocha.

***Deileptenia ribeata* (Clerck)**

A rare but widespread species. The larvae feed on conifers and possibly oaks, and birches. Popularly known as the Satin Beauty.

***Ectropis bistortata* (Goeze)**

A rare species, recorded from counties Cork and Kerry, and several northern counties. The larvae feed on deciduous trees and shrubs. Popularly known as the Engrailed.

***Ectropis crepuscularia* (Denis and Schiffermüller)**

A rare but widespread species. The larvae feed on deciduous trees and shrubs. Popularly known as the Small Engrailed.

***Electrophaes corylata* (Thunberg)**

A widespread species, the larvae feed on deciduous trees. Popularly known as the Broken-barred Carpet.

***Ennomos alniaria* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees. Popularly known as the Canary-shouldered Thorn.

***Ennomos autumnaria* (Werneburg)**

A rare species, recorded from county Wexford. The larvae feed on deciduous trees. Popularly known as the Large Thorn.

***Ennomos quercinaria* (Hufnagel)**

A widespread species, the larvae feed on deciduous trees. Popularly known as the August Thorn.

***Epione repandaria* (Hufnagel)**

A widespread species, the larvae feed on alders, hazel and willows. Popularly known as the Bordered Beauty.

***Epirrita autumnata* (Borkhausen)**

A rare species. The larvae feed on *inter alia* birches and common alder. Popularly known as the Autumnal Moth.

***Epirrita christyi* (Allen)**

Probably a widespread species, the larvae feed on deciduous trees. Popularly known as the Pale November Moth.

***Epirrita dilutata* (Denis and Schiffermüller)**

A widespread species, the larvae feed on deciduous trees and shrubs. Popularly known as the November Moth.

***Erannis defoliaria* (Clerck)**

A widespread species, the larvae feed on deciduous trees and shrubs. Popularly known as the Mottled Umber.

***Eulithis testata* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* willows, aspen and birches. Popularly known as the Chevron.

***Eupithecia abbreviata* Stephens**

A widespread species, the larvae feed on oaks and hawthorns. Popularly known as the Brindled Pug.

***Eupithecia abietaria* (Goeze)**

A widespread species, the larvae feed on the cones of Norway spruce, Sitka spruce, noble fir and silver fir. Popularly known as the Cloaked Pug.

***Eupithecia dodoneata* Guenée**

A widespread species, the larvae feed on hawthorns and oaks. Popularly known as the Oak-tree Pug.

***Eupithecia exiguata* (Hübner)**

A widespread species, the larvae feed on hawthorns, blackthorn, sycamore and possibly rowan. Popularly known as the Mottled Pug.

***Eupithecia indigata* (Hübner)**

A widespread species, the larvae feed on the buds and young shoots of Scots pine and larches. Popularly known as the Ochreous Pug.

***Eupithecia innotata* forma *fraxinata* Crewe**

A rare but widespread species. The larvae feed on common ash. Popularly known as the Ash Pug.

***Eupithecia intricata* (Zetterstedt)**

A rare species. Recorded from counties Clare and Kerry. The larvae feed on common juniper ssp. *nana*. The Irish subspecies of the moth (*hibernica* Mere) has been given the name Mere's Pug.

***Eupithecia lariciata* (Freyer)**

A widespread species, the larvae feed on larches. Popularly known as the Larch Pug.

***Eupithecia phoeniceata* (Rambur)**

Recorded from county Clare, the larvae feed on "false" cypresses and Monterey cypress. Popularly known as the Cypress Pug.

***Eupithecia pusillata* (Denis and Schiffermüller)**

A widespread species, the larvae feed on common juniper including the cultivated forms, thujas and "false" cypresses. Popularly known as the Juniper Pug.

***Eupithecia subfuscata* (Haworth)**

A widespread species, the larvae feed on *inter alia* the flowers and leaves of trees. Popularly known as the Grey Pug.

***Eupithecia tantillaria* Boisduval**

A rare species, recorded from counties Armagh, Down, Fermanagh, Kerry and Tyrone. The larvae feed on Norway spruce and Douglas fir. Popularly known as the Dwarf Pug.

***Eupithecia tenuiata* (Hübner)**

A widespread species, the larvae feed on the catkins of willows. Popularly known as the Slender Pug.

***Eupithecia vulgata* (Haworth)**

A widespread species, the larvae feed on *inter alia* the flowers and leaves of hawthorns and willows. Popularly known as the Common Pug.

***Geometra papilionaria* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* silver birch, common beech, common alder and common hazel. Popularly known as the Large Emerald.

***Hemithea aestivaria* (Hübner)**

A widespread species, the larvae feed on *inter alia* oaks, birches, hawthorn, blackthorn and other deciduous trees. Popularly known as the Common Emerald.

***Hydrelia flammeolaria* (Hufnagel)**

A rare species, recorded from Clare, Down and Kerry. The larvae feed on common alder and possibly sycamore. Popularly known as the Small Yellow Wave.

***Hydriomena furcata* (Thunberg)**

A widespread species, the larvae feed on *inter alia* willows and common hazel. Popularly known as the July Highflyer.

***Hydriomena impluviata* (Denis and Schiffermüller)**

A widespread species, the larvae feed on common alder. Popularly known as the May Highflier.

***Hydriomena ruberata* (Freyer)**

A widespread species, the larvae feed on willows. Popularly known as the Ruddy Highflyer.

***Hylaea fasciaria* (Linnaeus)**

A widespread species, the larvae feed on Pinaceae particularly Scots pine, Norway spruce and Douglas fir. Popularly known as the Barred Red.

***Hypomecis punctinalis* (Scopoli)**

A rare species, recorded from county Cork. The larvae feed on oaks, birches and sometimes willows and sycamore. Popularly known as the Pale Oak Beauty.

***Jodis lactearia* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* oaks, birches, common alder, blackthorn and hawthorn. Popularly known as the Little Emerald.

***Lobophora halterata* (Hufnagel)**

A rare but widespread species. The larvae feed on poplars including aspen. Popularly known as the Seraphim.

***Lomaspilis marginata* (Linnaeus)**

A widespread species, the larvae feed on willows, poplars including aspen and sometimes common hazel. Popularly known as the Clouded Border.

***Lomographa bimaculata* (Fabricius)**

A rare species. The recorded counties include Cork, Kerry and Wicklow. The larvae feed on hawthorns and blackthorn. Popularly known as the White-pinion Spotted.

***Lomographa temerata* (Denis and Schiffermüller)**

A widespread species, the larvae feed on rosaceous trees and aspen. Popularly known as the Clouded Silver.

***Lycia hirtaria* (Clerck)**

A rare but widespread species. The larvae feed on deciduous trees. Popularly known as the Brindled Beauty.

***Macaria liturata* (Clerck)**

A rare but widespread species. The larvae feed on Pinaceae including Scots pine and

Norway spruce. Popularly known as the Tawny-barred Angle.

***Odontopera bidentata* (Clerck)**

A widespread species, the larvae feed on deciduous and coniferous trees. Popularly known as the Scalloped Hazel.

***Operophtera brumata* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* trees and shrubs. Popularly known as the Winter Moth.

***Operophtera fagata* (Scharfenberg)**

A rare species. The recorded counties include Down, Fermanagh, Galway, Mayo, Monaghan and Tyrone. The larvae feed on birches and alders. Popularly known as the Northern Winter Moth.

***Opisthograptis luteolata* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees especially the Rosaceae. Popularly known as the Brimstone Moth.

***Ourapteryx sambucaria* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* deciduous trees and shrubs. Popularly known as the Swallow-tailed Moth.

***Paradarisa consonaria* (Hübner)**

Recorded from counties Cork and Kerry. The larvae feed on deciduous and coniferous trees. Popularly known as the Square Spot.

***Pasiphila rectangulata* (Linnaeus)**

A widespread species, the larvae feed on the flowers of *inter alia* apples, pears and cherries. Popularly known as the Green Pug.

***Peribatodes rhomboidaria* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* deciduous trees and yew. Popularly known as the Willow Beauty.

***Phigalia pilosaria* (Denis and Schiffermüller)**

A widespread species, the larvae feed on deciduous trees and shrubs. Popularly known as

the Pale Brindled Beauty.

***Plagodis dolabraria* (Linnaeus)**

A rare but widespread species. The larvae feed on oaks, birches, willows, sometimes common beech and sweet chestnut. Popularly known as the Scorched Wing.

***Plagodis pulveraria* (Linnaeus)**

A rare but widespread species. The larvae feed on common hazel, willows, birches and hawthorns. Popularly known as the Barred Umber.

***Plemyria rubiginata* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* common alder, blackthorn, and probably cherries, apples and birches. Popularly known as the Blue-bordered Carpet.

***Pterapherapteryx sexalata* (Retzius)**

A rare but widespread species. The larvae feed on willows. Popularly known as the Small Seraphim.

***Rheumaptera hastata* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* birches. Popularly known as the Argent and Sable.

***Rheumaptera undulata* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* willows and aspen. Popularly known as the Scallop Shell.

***Selenia dentaria* (Fabricius)**

A widespread species, the larvae feed on deciduous trees. Popularly known as the Early Thorn.

***Selenia lunularia* (Hübner)**

A rare but widespread species. The larvae feed on deciduous trees particularly oaks, birches and common ash. Popularly known as the Lunar Thorn.

***Thera britannica* (Turner)**

The species has become widespread since its discovery in County Dublin in 1958. The larvae feed on spruces including Norway spruce and Douglas fir. Popularly known as the

Spruce Carpet.

***Thera cognata* (Thunberg)**

The recorded counties includeAntrim, Clare, Donegal, Galway, Mayo and Sligo. The larvae feed on common juniper. Popularly known as the Chestnut-coloured Carpet.

***Thera firmata* (Hübner)**

A possibly rare but widespread species, the larvae feed on Scots pine. Popularly known as the Pine Carpet.

***Thera juniperata* (Linnaeus)**

The recorded counties include Antrim, Clare and Galway. The larvae feed on common juniper. Popularly known as the Juniper Carpet.

***Thera obeliscata* (Hübner)**

A widespread species, the larvae feed on Scots pine, Norway spruce and Douglas fir. Popularly known as the Grey Pine Carpet.

***Theria primaria* (Haworth)**

A rare but widespread species. The larvae feed on hawthorns and blackthorn. Popularly known as the Early Moth.

***Trichopteryx carpinata* (Borkhausen)**

A widespread species, the larvae feed on *inter alia* willows, birches and common alder. Popularly known as the Early Tooth-striped.

***Venusia cambrica* Curtis**

A rare but widespread species. The larvae feed on rowan and birches. Popularly known as the Welsh Wave.

GRACILLARIIDAE

***Acrocercops brongniardella* (Fabricius)**

A widespread species in the southern half of Ireland, the larvae feed on oaks.

***Callisto denticulella* (Thunberg)**

A widespread species in the southern half of Ireland, the larvae feed on apples.

***Caloptilia alchimiella* (Scopoli)**

A widespread species, the larvae feed on oaks.

***Caloptilia betulicola* (Hering)**

Recorded from counties Armagh, Dublin, Kerry and Offaly, the larvae feed on birches.

***Caloptilia cuculipennella* (Hübner)**

Recorded from counties Cork, Fermanagh, Kerry and Sligo, the larvae feed on *inter alia* common ash.

***Caloptilia elongella* (Linnaeus)**

A widespread species, the larvae feed on common alder.

***Caloptilia falconipennella* (Hübner)**

Recorded from county Westmeath, the larvae feed on common alder.

***Caloptilia leucapennella* (Stephens)**

A widespread species, the larvae feed on oaks.

***Caloptilia populetorum* (Zeller)**

Recorded from counties Clare, Galway and Wicklow, the larvae feed on birches.

***Caloptilia robustella* Jäckh**

Recorded from county Kerry, the larvae feed on oaks.

***Caloptilia stigmatella* (Fabricius)**

A widespread species, the larvae feed on willows and poplars.

***Caloptilia syringella* (Fabricius)**

A widespread species, the larvae feed on *inter alia* common ash.

***Deltaornix torquillella* (Zeller)**

A widespread species, the larvae feed on blackthorn.

***Parornix anglicella* (Stainton)**

A widespread species, the larvae feed on *inter alia* hawthorns, rowan and other *Sorbus* spp.

***Parornix betulae* (Stainton)**

A widespread species, the larvae feed on birches.

***Parornix devoniella* (Stainton)**

A widespread species, the larvae feed on common hazel.

***Parornix loganella* (Stainton)**

Recorded from county Kerry, the larvae feed on birches.

***Parornix scoticella* (Stainton)**

Recorded from counties Clare, Down, Dublin, Galway, Kerry, Tipperary and Wicklow, the larvae feed on rowan and other *Sorbus* spp.

***Phyllonorycter blancardella* (Fabricius)**

Recorded from counties Antrim, Fermanagh, Cork, Down, Fermanagh, Kerry and Kildare, the larvae feed on apples.

***Phyllonorycter coryli* (Nicelli)**

A widespread species, the larvae feed on common hazel. Popularly known as the Nut Leaf Blister Moth.

***Phyllonorycter corylifoliella* (Hübner)**

Recorded from counties Clare, Dublin, Galway, Tipperary, Waterford and Wicklow, the larvae feed on *inter alia* rosaceous trees.

***Phyllonorycter cydoniella* (Denis and Schiffermüller)**

Recorded from counties Antrim, Cork, Dublin, Fermanagh and Kerry, the larvae feed on *inter alia* apples and rowan and other *Sorbus* spp.

***Phyllonorycter froelichiella* (Zeller)**

Recorded from counties Clare, Cork, Kerry and Kilkenny, the larvae feed on common alder.

***Phyllonorycter harrisella* (Linnaeus)**

Recorded from counties Cork, Down, Fermanagh, Kerry, Laois, Waterford and Wicklow, the larvae feed on oaks.

***Phyllonorycter heegeriella* (Zeller)**

Recorded from counties Kerry and Wicklow, the larvae feed on oaks.

***Phyllonorycter hilarella* (Zetterstedt)**

A widespread species, the larvae feed on willows.

***Phyllonorycter kleemannella* (Fabricius)**

Recorded from counties Kerry and Wicklow, the larvae feed on common alder.

***Phyllonorycter lautella* (Zeller)**

A widespread species, the larvae feed on oaks.

***Phyllonorycter mespilella* (Hübner)**

Recorded from counties Cork, Dublin, Tipperary and Wicklow, the larvae feed on rowan and other *Sorbus* spp. and pears.

***Phyllonorycter messaniella* (Zeller)**

A widespread species, the larvae feed on oaks, common beech and sweet chestnut.

***Phyllonorycter nicellii* (Stainton)**

A widespread species, the larvae feed on common hazel.

***Phyllonorycter oxyacanthae* (Frey)**

A widespread species, the larvae feed on *inter alia* hawthorns and pears.

***Phyllonorycter quercifoliella* (Zeller)**

A widespread species, the larvae feed on oaks.

***Phyllonorycter rajella* (Linnaeus)**

A widespread species, the larvae feed on alders.

***Phyllonorycter roboris* (Zeller)**

Recorded from county Wicklow, the larvae feed on oaks.

***Phyllonorycter salicicolella* (Sircom)**

A widespread species, the larvae feed on willows particularly on goat willow and grey willow.

***Phyllonorycter salictella* (Zeller)**

Recorded from counties Kerry and Laois, the larvae feed on *inter alia* crack-willow.

***Phyllonorycter sorbi* (Frey)**

A widespread species, the larvae feed on rowan and other *Sorbus* spp. and bird cherry.

***Phyllonorycter spinicolella* (Zeller)**

A widespread species, the larvae feed on *inter alia* blackthorn.

***Phyllonorycter tristrigella* (Haworth)**

Recorded from county Kerry, the larvae feed on elms.

***Phyllonorycter ulmifoliella* (Hübner)**

A widespread species, the larvae feed on birches.

HELIOZELIDAE

***Heliozela hammoniella* (Sorhagen)**

Recorded from county Galway, the larvae feed on birches.

***Heliozela resplendella* (Stainton)**

Recorded from county Galway, the larvae feed on alders.

***Heliozela sericiella* (Haworth)**

Recorded from counties Galway, Kerry and Wicklow, the larvae feed on oaks.

INCURVARIIDAE

***Incurvaria masculella* (Denis and Schiffermüller)**

A widespread species, the larvae feed on deciduous trees, bushes and leaf litter.

***Incurvaria pectinea* Haworth**

Recorded from Clare, Cork, Fermanagh, Kerry, Tipperary and Wicklow, the larvae feed on deciduous trees and leaf litter.

***Phylloporia bistrigella* (Haworth)**

Recorded from counties Clare, Cork, Galway, Kerry, Mayo and Wicklow, the larvae feed on birches.

LASIOCAMPIDAE

***Eriogaster lanestris* (Linnaeus)**

A widespread species but mainly recorded from northern Ireland. The larvae feed on birches, hawthorns and blackthorn. Popularly known as the Small Eggar.

***Lasiocampa quercus* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees and shrubs including oaks, willows and hawthorn. Popularly known as the Oak Eggar.

***Malacosoma neustria* (Linnaeus)**

A widespread species but mainly found in the southern half of Ireland. The larvae feed on hawthorns, blackthorn, apples, willows and many other deciduous trees and shrubs. Popularly known as the Lackey.

***Poecilocampa populi* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees including oaks, birches, poplars, hawthorns. Popularly known as the December Moth.

***Trichiura crataegi* (Linnaeus)**

A rare species. The records include counties Clare, Derry, Fermanagh and Kerry. The larvae feed on trees and shrubs including blackthorn, hawthorns, birches, willows, oaks and common hazel. Popularly known as the Pale Eggar.

LYCAENIDAE

***Thecla betulae* (Linnaeus)**

A rare species. The records include counties Cork, Galway, Kerry and Wexford. The larvae feed on cherries particularly blackthorn. Popularly known as the Brown Hairstreak.

***Neozephyrus quercus* (Linnaeus)**

A rare but widespread species, the larvae feed on oaks and sometimes common ash. Popularly known as the Purple Hairstreak.

***Celastrina argiolus* (Linnaeus)**

Widespread, the larvae of the first brood feed on the flowers and developing fruits of female holly trees. Popularly known as the Holly Blue.

LYMANTRIIDAE

***Calliteara pudibunda* (Linnaeus)**

A widespread species. The larvae feed on deciduous trees. Popularly known as the Pale Tussock.

***Dicallomera fascelina* (Linnaeus)**

Rare and recorded from the midlands and the northern half of Ireland. The larvae feed on *inter alia* hawthorns and willows. Popularly known as the Dark Tussock.

***Euproctis similis* (Fuessly)**

A rare species. The recorded counties include Antrim, Down, Dublin, Galway, Mayo and Wicklow. The larvae feed on deciduous trees and shrubs. Popularly known as the Yellow-tail.

***Leucoma salicis* (Linnaeus)**

A rare species, recorded from counties Dublin, Mayo and Wicklow. The larvae feed on poplars and willows. Popularly known as the White Satin.

***Lymantria monacha* (Linnaeus)**

A rare species, recorded from counties Cork and Sligo. The larvae feed on oaks and sometimes other deciduous trees and Coniferae. popularly known as the Black Arches.

***Orgyia antiqua* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees and shrubs. Popularly known as the Vapourer.

LYONETIIDAE

***Leucoptera malifoliella* (Costa)**

Recorded from county Waterford, the larvae feed on rosaceous trees. Popularly known as the Pear Leaf Blister Moth.

***Lyonetia clerkella* (Linnaeus)**

A widespread species, the larvae feed on birches, rosaceous trees and bushes. Popularly known as the Apple Leaf Miner.

NEPTICULIDAE

***Bohemannia pulverosella* (Stainton)**

Widespread in the south-west and west of Ireland, the larvae mine apples.

***Bohemannia quadrimaculella* (Boheman)**

Recorded from counties Kerry and Wicklow, the larvae mine common alder.

***Ectoedemia albifasciella* (Heinemann)**

Recorded from counties Cork, Galway, Laois and Westmeath, the larvae mine oaks.

***Ectoedemia atricollis* (Stainton)**

Recorded from counties Kerry and Kilkenny, the larvae mine apples and other rosaceous

fruit trees.

***Ectoedemia intimella* (Zeller)**

Recorded from county Dublin, the larvae mine willows.

***Ectoedemia minimella* (Zetterstedt)**

Recorded from county Galway, the larvae mine birches and common hazel.

***Ectoedemia occultella* (Linnaeus)**

A widespread species, the larvae mine birches.

***Ectoedemia subbimaculella* (Haworth)**

Recorded from county Westmeath, the larvae mine oaks.

***Stigmella atricapitella* (Haworth)**

Recorded from counties Galway and Kerry, the larvae mine oaks.

***Stigmella betulicola* (Stainton)**

Recorded from counties Clare and Galway, the larvae mine silver birch and downy birch.

***Stigmella confusella* (Wood)**

Widespread in the south-west and west of Ireland, the larvae mine birches.

***Stigmella continuella* (Stainton)**

Recorded from counties Clare, Roscommon and Tipperary, the larvae mine birches.

***Stigmella crataegella* (Klimesch)**

A widespread species in midlands, south-west and west of Ireland, the larvae mine hawthorns.

***Stigmella floslactella* (Haworth)**

Widespread in the south-west and west of Ireland. Also found in county Westmeath, the larvae mine common hazel.

***Stigmella glutinosae* (Stainton)**

Recorded from counties Galway and Wicklow, the larvae mine common alder.

***Stigmella hemargyrella* (Kollar)**

Widespread in the south-west and west of Ireland, the larvae mine common beech.

***Stigmella hybnerella* (Hübner)**

A widespread species in the southern half of Ireland, the larvae mine hawthorns.

***Stigmella lapponica* (Wocke)**

Widespread in the south-west and west of Ireland, the larvae mine birches.

***Stigmella lemniscella* (Zeller)**

Recorded from counties Cork, Dublin, Galway, Kerry, Mayo and Tipperary, the larvae mine elms.

***Stigmella luteella* (Stainton)**

Recorded from county Clare, the larvae mine birches.

***Stigmella magdalenae* (Klimesch)**

Recorded from counties Galway and Kerry, the larvae mine rowan.

***Stigmella malella* (Stainton)**

Recorded from county Dublin, the larvae mine apples. Popularly known as the Apple Pygmy.

***Stigmella microtheriella* (Stainton)**

Widespread in the south-west and west of Ireland, the larvae mine common hazel and hornbeam.

***Stigmella nylandriella* (Tengström)**

Recorded from counties Cork, Kerry, Galway and Mayo, the larvae mine rowan.

***Stigmella obliquella* (Heinemann)**

Recorded from counties Dublin and Wicklow, the larvae mine willows.

***Stigmella paradoxa* (Frey)**

Recorded from counties Clare and Galway, the larvae mine hawthorns.

***Stigmella perpygmaeella* (Doubleday)**

Recorded from county Clare, the larvae mine hawthorns.

***Stigmella plagicolella* (Stainton)**

A widespread species in the southern half of Ireland, the larvae mine cherries.

***Stigmella ruficapitella* (Haworth)**

Recorded from county Kerry, the larvae mine oaks.

***Stigmella salicis* (Stainton)**

A widespread species in the south-west and west of Ireland, the larvae mine willows.

***Stigmella sorbi* (Stainton)**

Recorded from counties Clare, Cork, Galay, Kerry and Wicklow, the larvae mine rowan and other *Sorbus* spp.

***Stigmella svenssoni* (Johansson)**

Recorded from the south-west and west of Ireland, the larvae mine oaks.

***Stigmella tityrella* (Stainton)**

Widespread in the south-west and west of Ireland, the larvae mine common beech.

***Stigmella trimaculella* (Haworth)**

Recorded from county Dublin, the larvae mine black poplar and varieties.

***Stigmella ulmivora* (Fologne)**

A widespread species in south-east Ireland, the larvae mine elms.

NOCTUIDAE

***Acronicta aceris* (Linnaeus)**

A doubtful species with records from counties Cork, Fermanagh and Galway, the larvae feed on chestnut, sycamore, field maple and other deciduous trees. Popularly known as the Sycamore.

***Acronicta alni* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees particularly common alder and birches. Popularly known as the Alder Moth.

***Acronicta leporina* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* common alder, birches and sometimes oaks, poplars and willows. Popularly known as the Miller.

***Acronicta megacephala* (Denis and Schiffermüller)**

A widespread species, the larvae feed on poplars particularly black poplar and sometimes

willows. Popularly known as the Poplar Grey.

***Acronicta psi* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees and bushes. Popularly known as the Grey Dagger.

***Acronicta rumicis* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* deciduous shrubs. Popularly known as the Knot Grass.

***Acronicta tridens* (Denis and Schiffermüller)**

A doubtful species, the recorded counties including Donegal, Dublin, Fermanagh, Galway, Offaly, Sligo and Trone, the larvae feed on rosaceous trees and sometimes those of other families. Popularly known as the Dark Dagger.

***Agrochola circellaris* (Hufnagel)**

A widespread species, the larvae feed on the buds, flowers and leaves of Wych elm, poplars and common ash. Popularly known as the Brick.

***Agrochola lota* (Clerck)**

A widespread species, the larvae feed on the catkins, shoots and leaves of willows. Popularly known as the Red-line Quaker.

***Agrochola lychnidis* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* deciduous trees. Popularly known as the Beaded Chestnut.

***Agrochola macilenta* (Hübner)**

A widespread species, the larvae feed on *inter alia* deciduous trees. Popularly known as the Yellow-line Quaker.

***Allophyes oxyacanthae* (Linnaeus)**

A widespread species, the larvae feed on rosaceous trees particularly hawthorns, blackthorn and rowan. Popularly known as the Green-brindled Crescent.

***Amphipyra berbera* Rungs**

As it was confused with the previous species, it is not known how widespread *A. berbera* is.

The larvae feed on oaks, hornbeam and probably other trees. Popularly known as Svennson's Copper Underwing.

***Amphipyra pyramidea* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees and bushes particularly oaks. Popularly known as the Copper Underwing.

***Amphipyra tragopoginis* (Clerck)**

A widespread species, the larvae feed on *inter alia* deciduous shrubs particularly willows. Popularly known as the Mouse Moth.

***Antitype chi* (Linnaeus)**

A species with a mainly northern distribution, the larvae feed on *inter alia* deciduous trees. Popularly known as the Grey Chi.

***Asteroscopus sphinx* (Hufnagel)**

A rare but widespread species. The larvae feed on deciduous trees particularly hawthorns, oaks and willows. Popularly known as the Sprawler.

***Atethmia centrago* (Haworth)**

A rare but widespread species, the larvae feed on the buds and flowers of common ash. Popularly known as the Centre-barred Sallow.

***Autographa jota* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* deciduous trees. Popularly known as the Plain Golden Y.

***Brachylomia viminalis* (Fabricius)**

A rare but widespread species. The larvae feed on willows. Popularly known as the Minor Shouldered-knot.

***Catocala fraxini* (Linnaeus)**

A rare species with records from counties Derry and Dublin, the larvae feed on poplars particularly aspen. Popularly known as the Clifden Nonpareil.

***Catocala nupta* (Linnaeus)**

A rare species, recorded from county Cork, the larvae feed on willows and poplars.

Popularly known as the Red Underwing.

***Colocasia coryli* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees particularly common beech, common hazel and birches. Popularly known as the Nut-tree Tussock.

***Conistra ligula* (Esper)**

A rare but widespread species, the larvae feed on *inter alia* deciduous trees particularly willows and cherries. Popularly known as the Dark Chestnut.

***Conistra vaccinii* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* deciduous trees and shrubs. Popularly known as the Chestnut.

***Cosmia trapezina* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* deciduous trees. Popularly known as the Dun-bar.

***Craniophora ligustri* (Denis and Schiffermüller)**

A rare species with records from counties Antrim, Clare, Fermanagh, and Galway, the larvae feed on *inter alia* common ash, common alder and common hazel. Popularly known as the Coronet.

***Diarsia brunnea* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* deciduous trees and shrubs. Popularly known as the Purple Clay.

***Diarsia dahlii* (Hübner)**

A widespread species, the larvae feed on *inter alia* birches. Popularly known as the Barred Chestnut.

***Dichonia aprilina* (Linnaeus)**

A widespread species, the larvae feed on the bud, flowers and leaves of oaks. Popularly known as the Merveille du Jour.

***Dryobotodes eremita* (Fabricius)**

A rare species with a mainly northern and north-eastern distribution, the larvae feed on the

buds and leaves of oaks. Popularly known as the Brindled Green.

***Earias clorana* (Linnaeus)**

A rare species, definitely recorded from county Cork, the larvae feed on willows. Popularly known as the Cream-bordered Green Pea.

***Euplexia lucipara* (Linnaeus)**

A widespread species, the larvae feed sometimes on *inter alia* deciduous shrubs. Popularly known as the Small Angle Shades.

***Eupsilia transversa* (Hufnagel)**

A widespread species, the larvae feed on *inter alia* deciduous trees. Popularly known as the Satellite.

***Eurois occulta* (Linnaeus)**

A rare species, recorded from counties Clare, Derry, Down, Dublin, Galway, Kerry and Sligo. The larvae feed on *inter alia* birches and willows. Popularly known as the Great Brocade.

***Graphiphora augur* (Fabricius)**

A widespread species, the larvae feed on *inter alia* deciduous trees. Popularly known as the Double Dart.

***Herminia grisealis* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* the fresh and withered leaves of oaks, common alder, small leafed lime, birches, common hazel and hawthorns. Popularly known as the Small Fan-foot.

***Hyppa rectilinea* (Esper)**

A rare species with definite records from county Kerry, the larvae feed on *inter alia* willows. Popularly known as the Saxon.

***Ipimorpha subtusa* (Denis and Schiffermüller)**

A rare species, the larvae feed on poplars including aspen. Popularly known as the Olive.

***Lacanobia contigua* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* deciduous trees and shrubs. Popularly known as the Beautiful Brocade.

***Lacanobia thalassina* (Hufnagel)**

A widespread species, the larvae feed on *inter alia* deciduous trees. Popularly known as the Pale-shouldered Brocade.

***Lithophane hepatica* (Clerck)**

A widespread species, the larvae feed on *inter alia* deciduous trees and shrubs. Popularly known as the Pale Pinion.

***Lithophane ornitopus* (Hufnagel)**

A widespread species, the larvae feed on oaks. Popularly known as the Grey Shoulder-knot.

***Melanchra persicariae* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* European larch. Popularly known as the Dot Moth.

***Melanchra pisi* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* deciduous trees and shrubs. Popularly known as the Broom Moth.

***Minucia lunaris* (Denis and Schiffermüller)**

A doubtful species, recorded from county Kerry, the larvae feed on oaks. Popularly known as the Lunar Double-stripe.

***Mniotype adusta* (Esper)**

A widespread species, the larvae feed on *inter alia* deciduous trees. Popularly known as the Dark Brocade.

***Mormo maura* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* deciduous trees and shrubs. Popularly known as the Old Lady.

***Nycteola revayana* (Scopoli)**

A widespread species, the larvae feed on oaks. Popularly known as the Oak Nycteoline.

***Orthosia cerasi* (Fabricius)**

A widespread species, the larvae feed on deciduous trees particularly oaks and willows. Popularly known as the Common Quaker.

***Orthosia cruda* (Denis and Schiffermüller)**

A widespread species, the larvae feed on deciduous trees particularly oaks and willows. Popularly known as the Small Quaker.

***Orthosia gothica* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* deciduous trees. Popularly known as the Hebrew Character.

***Orthosia gracilis* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* willows. Popularly known as the Powdered Quaker.

***Orthosia incerta* (Hufnagel)**

A widespread species, the larvae feed on deciduous trees and bushes particularly oaks and willows. Popularly known as the Clouded Drab.

***Orthosia miniosa* (Denis and Schiffermüller)**

A rare species. The recorded counties include Dublin, Kildare, Tipperary and Wicklow. The larvae feed on *inter alia* oaks. Popularly known as the Blossom Underwing.

***Orthosia munda* (Denis and Schiffermüller)**

A rare but uncommon species. The larvae feed on deciduous trees particularly willows, elms, oaks and aspen. Popularly known as the Twin-spotted Quaker.

***Orthosia opima* (Hübner)**

A rare but widespread species. The larvae feed on *inter alia* willows and birches. Popularly known as the Northern Drab.

***Orthosia populeti* (Fabricius)**

Recorded from counties Down, Fermanagh and Westmeath, the larvae feed on the catkins and leaves of aspen and other poplars. Popularly known as the Lead-coloured Drab.

***Panolis flammea* (Denis and Schiffermüller)**

A rare but widespread species. The larvae feed on Scots pine, maritime pine and beach pine. Popularly known as the Pine Beauty.

***Papestra biren* (Goeze)**

A widespread species, the larvae feed on *inter alia* willows. Popularly known as the Glaucous Shears.

***Parastichtis ypsillon* (Denis and Schiffermüller)**

A rare species, the recorded counties include Antrim, Armagh, Derry, Down, Dublin and Wicklow, the larvae feed on willows and sometimes black poplar. Popularly known as the Dingy Shears.

***Pechipogo strigilata* (Linnaeus)**

A rare species, recorded from county Down, Dublin and Kerry, the larvae feed on *inter alia* the catkins of birches in spring. Popularly known as the Common Fan-foot.

***Polia nebulosa* (Hufnagel)**

A widespread species, the larvae feed on *inter alia* deciduous trees. Popularly known as the Grey Arches.

***Pseudoips prasinana* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees particularly oaks and common beech. Popularly known as the Green Silver Lines.

***Scoliopteryx libatrix* (Linnaeus)**

A widespread species, the larvae feed on willows, poplars and rowan. Popularly known as the Herald.

***Xanthia icteritia* (Hufnagel)**

A widespread species, the larvae feed on *inter alia* the catkins of willows. Popularly known as the Sallow.

***Xanthia togata* (Esper)**

A widespread species, the larvae feed on *inter alia* the catkins of willows and poplars. Popularly known as the Pink-barred Sallow.

***Xestia baja* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* deciduous trees and shrubs. Popularly known as the Dotted Clay.

***Xestia ditrapezium* (Denis and Schiffermüller)**

A rare species, recorded from counties Down, Dublin and Galway. The larvae feed on *inter alia* deciduous trees and shrubs. Popularly known as the Triple-spotted Clay.

***Xestia triangulum* (Hufnagel)**

A widespread species, the larvae feed mainly on deciduous trees and shrubs. Popularly known as the Double Square-spot.

***Xestia xanthographa* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* deciduous trees. Popularly known as the Square-spot Rustic.

***Xylena exsoleta* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* deciduous trees and shrubs. Popularly known as the Sword-grass.

***Xylena vetusta* (Hübner)**

A widespread species, the larvae feed on *inter alia* deciduous trees and shrubs. Popularly known as the Red Sword-grass.

NOLIDAE

***Nola confusalis* (Herrich-Schäffer)**

A widespread species, the larvae feed on limes, Holm oak, common beech and blackthorn. Popularly known as the Least Black Arches.

NOTODONTIDAE

***Cerura vinula* (Linnaeus)**

A widespread species, the larvae feed on poplars and willows. Popularly known as the Puss Moth.

***Clostera curtula* (Linnaeus)**

A rare species with doubtful records. The larvae feed on poplars and willows. Popularly known as the Chocolate-tip.

***Clostera pigra* (Hufnagel)**

A widespread species, the larvae feed on willows and aspen. Popularly known as the Small

Chocolate-tip.

***Diloba caeruleocephala* (Linnaeus)**

A rare but widespread species, the larvae feed on hawthorns, blackthorn and apples. Popularly known as the Figure of Eight.

***Drymonia dodonaea* (Denis and Schiffermüller)**

A rare species, recorded from counties Cork, Kerry and Sligo, the larvae feed on oaks. Popularly known as the Marbled Brown.

***Drymonia ruficornis* (Hufnagel)**

A widespread species, the larvae feed on oaks. Popularly known as the Lunar Marbled Moth.

***Furcula bicuspis* (Borkhausen)**

Recorded from County Fermanagh, the larvae feed on birches and common alder. Popularly known as the Alder Kitten.

***Leucodonta bicoloria* (Denis and Schiffermüller)**

Possibly extinct. Recorded from county Kerry. The larvae feed on birches. Popularly known as the White Prominent.

***Notodonta dromedarius* (Linnaeus)**

A widespread species, the larvae feed on birches and sometimes common alder and common hazel. Popularly known as the Iron Prominent.

***Notodonta ziczac* (Linnaeus)**

A widespread species, the larvae feed on willows and poplars. Popularly known as the Pebble Prominent.

***Odontosia carmelita* (Esper)**

A rare species, recorded from counties Cork, Fermanagh, Kerry, Tipperary, Tyrone and Wicklow. The larvae feed on birches. Popularly known as the Scarce Prominent.

***Phalera bucephala* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees and shrubs. Popularly known as the Buff-tip.

***Pheosia gnoma* (Fabricius)**

A widespread species, the larvae feed on birches. Popularly known as the Lesser Swallow Prominent.

***Pheosia tremula* (Clerck)**

A widespread species, the larvae feed on poplars and willows. Popularly known as the Swallow Prominent.

***Pterostoma palpina* (Clerck)**

A widespread species, the larvae feed on poplars and willows. Popularly known as the Pale Prominent.

***Ptilodon capucina* (Linnaeus)**

A widespread species, the larvae feed on deciduous trees. Popularly known as the Coxcomb Prominent.

***Stauropus fagi* (Linnaeus)**

A rare species. The recorded counties include Cork, Fermanagh, Galway and Kerry. The larvae feed on common beech, oaks, birches and common hazel. Popularly known as the Lobster Moth.

OECOPHORIDAE

***Agonopterix conterminella* (Zeller)**

A widespread species, the larvae feed on willows.

***Agonopterix ocellana* (Fabricius)**

A widespread species, the larvae feed on willows.

***Alabonia geoffrella* (Linnaeus)**

Recorded from counties Kerry and Sligo, the larvae feed on decaying wood, under bark.

***Carcina quercana* (Fabricius)**

A widespread species, the larvae feed on deciduous trees and bushes.

***Dasystoma salicella* (Hübner)**

Recorded from county Tyrone, the larvae feed on *inter alia* willows and blackthorn.

***Denisia similella* (Hübner)**

Recorded from county Kerry, the larvae feed under dead or loose bark.

***Diurnea fagella* (Denis and Schiffermüuller)**

A widespread species, the larvae feed on deciduous trees.

***Diurnea lipsiella* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* oaks.

***Esperia sulphurella* (Fabricius)**

A widespread species, the larvae feed on decaying or dead wood and under bark.

PRODOXIDAE

***Lampronia fuscatella* (Tengström)**

Recorded from counties Clare, Cork, Galway, Kerry and Wicklow, the larvae feed on birches.

PYRALIDAE

***Acrobasis consociella* (Hübner)**

A widespread species, the larvae feed on oaks.

***Cryptoblabes bistriga* (Haworth)**

Recorded from county Wicklow, the larvae feed on oaks and alders.

***Dioryctria abietella* (Denis and Schiffermüller)**

Recorded from counties Cork and Sligo, the larvae feed on Scots pine, Douglas fir and other Pinaceae.

***Phycita roborella* (Denis and Schiffermüller)**

A widespread species in the southern half of Ireland, the larvae feed on oaks, pears and apples.

***Trachycera advenella* (Zincken)**

A widespread species, the larvae feed on hawthorns and rowan.

***Trachycera marmorea* (Haworth)**

A widespread species, the larvae feed on blackthorn, hawthorns, rowan and other *Sorbus* spp.

SATURNIIDAE

***Saturnia pavonia* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* blackthorn, hawthorn, willows, birches. Popularly known as the Emperor Moth.

SESIIDAE

***Sesia apiformis* (Clerck)**

Recorded from counties Cork, Dublin, Kildare and Waterford, the larvae feed on black poplar. Popularly known as the Hornet Moth.

***Sesia bembeciformis* (Hübner)**

A widespread species. The larvae feed on willows. Popularly known as the Lunar Hornet Moth.

***Sesia formicaeformis* (Esper)**

Recorded from Armagh, Cork, Kerry, Louth and Sligo, the larvae feed on willows. Popularly known as the Red-tipped Clearwing.

***Sesia myopaeformis* (Borkhausen)**

Recorded from county Armagh, the larvae feed on apples. Popularly known as the Red-belted Clearwing.

***Sesia scoliaeformis* (Borkhausen)**

Recorded from county Kerry, the larvae feed on birches. Popularly known as the Welsh Clearwing.

SPHINGIDAE

***Laothoe populi* (Linnaeus)**

A widespread species, the larvae feed on poplars and willows. Popularly known as the Poplar Hawk-moth.

***Smerinthus ocellata* (Linnaeus)**

A widespread species, the larvae feed on willows and apples. Popularly known as the Eyed Hawk-moth.

TISCHERIIDAE

***Tischeria dodonaea* Stainton**

Recorded from county Kerry, the larvae feed on oaks and sweet chestnut.

***Tischeria ekebladella* (Bjerkander)**

Recorded from counties Antrim, Dublin and Kerry, the larvae feed on oaks and sweet chestnut.

TORTRICIDAE

***Acleris cristana* (Denis and Schiffermüller)**

Recorded from counties Antrim, Cork and Kerry, the larvae feed on rosaceous trees particularly blackthorn.

***Acleris emargana* (Fabricius)**

A widespread species, the larvae feed on willows and other wood, hedgerow and marshland trees and shrubs.

***Acleris ferrugana* (Denis and Schiffermüller)**

A widespread species, the larvae feed on oaks and goat willow.

***Acleris forsskaleana* (Linnaeus)**

Recorded from county Cork, the larvae feed on field maple and sycamore.

***Acleris hastiana* (Linnaeus)**

A widespread species, the larvae feed on small-leaved willows.

***Acleris holmiana* (Linnaeus)**

A widespread species, the larvae feed on rosaceous trees and shrubs.

***Acleris laterana* (Fabricius)**

A widespread species, the larvae feed on *inter alia* willows, rosaceous trees and shrubs.

***Acleris literana* (Linnaeus)**

Recorded from counties Cork, Fermanagh, Kerry and Tyrone, the larvae feed on oaks.

***Acleris permutana* (Duponchel)**

Recorded from counties Clare, Dublin and Galway, the larvae feed on *inter alia* blackthorn.

***Acleris rhombana* (Denis and Schiffermüller)**

A widespread species, the larvae feed on trees and shrubs. Popularly known as the Rhomboid Tortrix.

***Acleris rufana* (Denis and Schiffermüller)**

Recorded from counties Cork, Donegal, Dublin and Mayo, the larvae feed on wet woodland including willows.

***Acleris sparsana* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* common beech and sycamore.

***Acleris variegana* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* rosaceous trees and shrubs. Popularly known as the Garden Rose Tortrix.

***Aleimma loeflingiana* (Linnaeus)**

A widespread species, the larvae feed on oaks, hornbeam and field maple.

***Ancylis achatana* (Denis and Schiffermüller)**

Recorded from county Clare, the larvae feed on *inter alia* blackthorn and hawthorn.

***Ancylis diminutana* (Haworth)**

Possibly a widespread species, the larvae feed on willows.

***Ancylis mitterbacheriana* (Denis and Schiffermüller)**

A widespread species, the larvae feed on oaks and common beech.

***Apotomis betuletana* (Haworth)**

A widespread species, the larvae feed on birches.

***Apotomis capreana* (Hübner)**

Recorded from counties Cork and Kerry, the larvae feed on goat willow.

***Apotomis lineana* (Denis and Schiffermüller)**

A widespread species, the larvae feed on white willow and crack willow.

***Apotomis semifasciana* (Haworth)**

Recorded from counties Clare, Cork, Galway, Kerry and Tyrone, the larvae feed on willows.

***Apotomis sororculana* (Zetterstedt)**

Recorded from counties Cork, Donegal, Galway and Kerry, the larvae feed on birches.

***Apotomis turbidana* (Hübner)**

A widespread species, the larvae feed on birches.

***Archips crataegana* (Hübner)**

Recorded from counties Antrim, Kerry and Wicklow, the larvae feed on deciduous trees and shrubs. Popularly known as the Brown Oak Tortrix.

***Archips oporana* (Linnaeus)**

A widespread species, the larvae feed on conifers.

***Archips rosana* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* fruit trees. Popularly known as the Rose Tortrix.

***Archips xylosteana* (Linnaeus)**

A widespread species, the larvae feed mainly on trees and shrubs. Popularly known as the Variegated Golden Tortrix.

***Capua vulgana* (Frölich)**

A widespread species, the larvae mainly feed on woodland trees and bushes.

***Celypha lacunana* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* trees and shrubs.

***Choristoneura hebenstreitella* (Müller)**

Recorded from counties Dublin, Galway, Sligo, Tipperary and Wicklow, the larvae feed on *inter alia* deciduous trees and shrubs.

***Clavigesta sylvestrana* (Curtis)**

Recorded from county Cork, the larvae feed on *inter alia* maritime pine.

***Clepsis rurinana* (Linnaeus)**

Recorded from county Clare, the larvae feed on deciduous trees and shrubs.

***Clepsis senecionana* (Hübner)**

A rare but widespread species, the larvae sometimes feed on conifer seedlings.

***Cochylis nana* (Haworth)**

Recorded from counties Cork, Kerry and Wicklow, the larvae feed on the catkins of birches.

***Cydia coniferana* (Ratzeburg)**

Recorded from county Cork, the larvae feed on *inter alia* Scots pine.

***Cydia fagiglandana* (Zeller)**

Recorded from county Cork, the larvae feed on common beech.

***Cydia pomonella* (Linnaeus)**

A widespread species, the larvae feed on fruit and nuts including those of apples, sweet chestnut, walnut and pears. Popularly known as the Codling Moth.

***Cydia splendana* (Hübner)**

Recorded from counties Clare, Cork and Donegal, the larvae feed on oaks, sweet chestnut and walnut.

***Ditula angustiorana* (Haworth)**

A widespread species, the larvae feed on *inter alia* trees and shrubs. Popularly known as the Red-barred Tortrix.

***Enarmonia formosana* (Scopoli)**

A widespread species, the larvae feed on cherries and apples. Popularly known as the Cherry Bark Tortrix.

***Epagoge grotiana* (Fabricius)**

A widespread species, the larvae feed on *inter alia* oaks and hawthorns.

***Epiblema trimaculana* (Haworth)**

A widespread species, the larvae feed on hawthorns.

***Epinotia abbreviana* (Fabricius)**

A widespread species, the larvae feed on elms and field sycamore.

***Epinotia bilunana* (Haworth)**

A widespread species, the larvae feed on birches.

***Epinotia brunnichana* (Linnaeus)**

Recorded from Connemara, the larvae feed on birches, common hazel and willows.

***Epinotia caprana* (Fabricius)**

A widespread species, the larvae feed on *inter alia* willows.

***Epinotia crenana* (Hübner)**

Recorded from counties Clare and Down, the larvae feed on willows in high woodland.

***Epinotia cruciana* (Linnaeus)**

A widespread species, the larvae feed on willows. Popularly known as the Willow Tortrix.

***Epinotia fraternana* (Haworth)**

Recorded from counties Wexford and Wicklow, the larvae feed on firs.

***Epinotia immundana* (Fischer von Röslerstamm)**

A widespread species, the larvae feed on birches and common alder.

***Epinotia maculana* (Fabricius)**

Recorded from counties Cork and Fermanagh, the larvae feed on poplars including aspen.

***Epinotia nanana* (Treitschke)**

Recorded from counties Antrim and Cork, the larvae feed on Norway spruce and Sitka spruce.

***Epinotia nisella* (Clerck)**

A widespread species, the larvae feed on willows and poplars.

***Epinotia ramella* (Linnaeus)**

A widespread species, the larvae feed on birches.

***Epinotia rubiginosana* (Herrich-Schäffer)**

Recorded from county Cork, the larvae feed on Scots pine and stone pine.

***Epinotia signatana* (Douglas)**

Recorded from counties Dublin and Mayo, the larvae feed on cherries, blackthorn and apples.

***Epinotia solandriana* (Linnaeus)**

A widespread species, the larvae feed on birches, common hazel and goat willow.

***Epinotia subocellana* (Donovan)**

A widespread species, the larvae feed on willows.

***Epinotia subsequana* (Haworth)**

Recorded from county Cork, the larvae feed on Norway spruce and firs.

***Epinotia tedella* (Clerck)**

A widespread species, the larvae feed on Norway spruce and Sitka spruce.

***Epinotia tetraquetrana* (Haworth)**

A widespread species, the larvae feed on birches and common alder.

***Epinotia trigonella* (Linnaeus)**

A widespread species, the larvae feed on birches.

***Eudemis profundana* (Denis and Schiffermüller)**

A widespread species in the southern half of Ireland, the larvae feed on oaks.

***Eulia ministrana* (Linnaeus)**

A widespread species, the larvae feed on *inter alia* woodland trees and shrubs.

***Grapholita funebrana* (Treitschke)**

Recorded from county Clare, the larvae feed on cherries including blackthorn. Popularly known as the Plum Fruit Moth.

***Grapholita tenebrosana* (Duponchel)**

Recorded from counties Dublin and Kerry, the larvae feed on *inter alia* rowan.

***Gypsonoma aceriana* (Duponchel)**

Recorded from county Cork, the larvae feed on poplars.

***Gypsonoma dealbana* (Frölich)**

A widespread species, the larvae feed on *inter alia* hawthorns, oaks, poplars and willows.

***Gypsonoma sociana* (Haworth)**

Recorded from county Antrim, the larvae feed on black-poplar and aspen.

***Hedya ochroleucana* (Frölich)**

Recorded from counties Cork, Dublin, Fermanagh and Kerry, the larvae feed on *inter alia* apples.

***Hedya pruniana* (Hübner)**

A widespread species, the larvae feed on cherries including blackthorn and plum. Popularly

known as the Plum Tortrix.

***Lobesia reliquana* (Hübner)**

Recorded from counties Cork, Kerry, Sligo and Tipperary, the larvae feed on oaks, blackthorn and birches.

***Lozotaenia forsterana* (Fabricius)**

A widespread species, the larvae feed on trees and shrubs.

***Metendothenia atropunctana* (Zetterstedt)**

A widespread species, the larvae feed on *inter alia* willows and birches.

***Orthotaenia undulana* (Denis and Schiffermüller)**

A widespread species, the larvae feed on *inter alia* trees and shrubs.

***Pammene argyrana* (Hübner)**

Recorded from counties Cork, Galway, Kerry and Wicklow, the larvae feed on oaks in a gall.

***Pammene fasciana* (Linnaeus)**

Recorded from counties Kerry and Wicklow, the larvae feed in the fruit of oaks and sweet chestnut.

***Pammene populana* (Fabricius)**

A widespread but local species, the larvae feed on the shoots of willows.

***Pammene regiana* (Zeller)**

A widespread but rare species in the east, south and west of Ireland, the larvae feed on the seeds of maples including sycamore.

***Pammene rhediella* (Clerck)**

A widespread species, the larvae feed on hawthorns and other rosaceous trees. Popularly known as the Fruitlet Mining Tortrix.

***Pammene spiniana* (Duponchel)**

Recorded from counties Clare, Dublin and Galway, the larvae feed on the flowers of blackthorn and hawthorns.

***Pammene splendidulana* (Guenée)**

Recorded from counties Galway, Kerry, Limerick and Wicklow, the larvae feed on oaks.

***Pandemis cerasana* (Hübner)**

A widespread species, the larvae feed on deciduous trees and shrubs. Popularly known as the

Barred Fruit-tree Tortrix.

***Pandemis corylana* (Fabricius)**

Recorded from counties Clare, Cork, Fermanagh, Kerry and Wicklow, the larvae live on deciduous trees and shrubs. Popularly known as Chequered Fruit-tree Tortrix.

***Pandemis heparana* (Denis and Schiffermüller)**

A widespread species, the larvae feed on deciduous trees and shrubs. Popularly known as the Dark Fruit-tree Tortrix.

***Philedone gerningana* (Denis and Schiffermüller)**

Recorded from the northern half of Ireland, the larvae sometimes feed on Sitka spruce.

***Philedonides lunana* (Thunberg)**

A widespread species, the larvae sometimes feed on conifer seedlings.

***Piniphila bifasciana* (Haworth)**

Recorded from county Dublin, the larvae feed on Scots pine and maritime pine.

***Pseudargyrotoza conwagana* (Fabricius)**

A widespread species, the larvae feed on *inter alia* the seeds of common ash.

***Pseudococcyx posticana* (Zetterstedt)**

A widespread species, the larvae feed on Scots pine.

***Ptycholoma lecheana* (Linnaeus)**

A widespread species, the larvae feed on trees and shrubs, occasionally on conifers.

***Rhopobota naevana* (Hübner)**

A widespread species, the larvae feed on trees and shrubs particularly holly. Popularly known as the Holly Tortrix.

***Rhyacionia buoliana* (Denis and Schiffermüller)**

Recorded from counties Antrim and Carlow, the larvae feed on *inter alia* Scots pine. Popularly known as the Pine Shoot Moth.

***Rhyacionia pinivorana* (Lienig and Zeller)**

Recorded from counties Armagh, Donegal, Galway, Tyrone and Wicklow, the larvae feed on Scots pine. Popularly known as the Spotted Shoot Moth.

***Spilonota laricana* (Heinemann)**

Recorded from counties Cork and Dublin, the larvae feed on larch and other conifers.

***Spilonota ocellana* (Denis and Schiffermüller)**

Recorded from counties Antrim, Clare, Cork, Dublin and Sligo, the larvae feed on deciduous trees and shrubs. Popularly known as the Bud Moth.

***Strophedra nitidana* (Fabricius)**

Recorded from counties Kildare and Wicklow, the larvae feed on oaks.

***Tortricodes alternella* (Denis and Schiffermüller)**

Recorded from counties Carlow, Dublin and Wicklow, the larvae feed mainly on woodland trees.

***Tortrix viridana* (Linnaeus)**

A widespread species, the larvae feed on woodland trees and understorey shrubs. Popularly known as the Green Oak Tortrix.

***Zeiraphera griseana* (Hübner)**

Recorded from counties Antrim and Cork, the larvae feed on European larch and other conifers. Popularly known as the Larch Tortrix.

***Zeiraphera isertana* (Fabricius)**

A widespread species, the larvae feed on oaks.

***Zeiraphera ratzeburgiana* (Ratzeburgh)**

Recorded from counties Antrim, Cork and Galway, the larvae feed on conifers. Popularly known as the Spruce Bud Moth.

YPONOMEUTIDAE

***Argyresthia albistria* (Haworth)**

A widespread species, the larvae feed on blackthorn.

***Argyresthia arceuthina* Zeller**

Recorded from counties Galway and Sligo, the larvae feed on the shoots of common juniper.

***Argyresthia bonnetella* (Linnaeus)**

A widespread species, the larvae feed on hawthorns.

***Argyresthia brockeella* (Hübner)**

A widespread species, the larvae feed on the catkins of birches and common alder.

***Argyresthia conjugella* Zeller**

A widespread species, the larvae feed on apples, whitebeam and rowan. Popularly known as the Apple Fruit Moth.

***Argyresthia curvella* (Linnaeus)**

Recorded from counties Armagh, Clare, Dublin and Sligo, the larvae feed on the flowering shoots of apples.

***Argyresthia dilectella* Zeller**

Recorded from counties Cork and Mayo, the larvae feed on *inter alia* the shoots of common juniper and "false" cypresses.

***Argyresthia glaucinella* Zeller**

Recorded fom counties Cork, Dublin, Kerry and Laois, the larvae feed on the bark of oaks, birches and horse chestnut.

***Argyresthia goedartella* (Linnaeus)**

A widespread species, the larvae feed on the catkins of birches.

***Argyresthia laevigatella* (Heydenreich)**

A widespread species, the larvae feed on the terminal twigs of larches.

***Argyresthia pruniella* (Clerck)**

A widespread species, the larvae feed on cherries. Popularly known as the Cherry Fruit Moth.

***Argyresthia pygmaeella* (Denis and Schiffermüller)**

A widespread species, the larvae feed on the leaf buds and shoots of goat willow and grey willow.

***Argyresthia retinella* Zeller**

A widespread species, the larvae feed on the shoots or buds of birches.

***Argyresthia semifusca* (Haworth)**

Recorded from counties Clare, Cork, Galway, Kerry and Tyrone, the larvae feed on hawthorns and rowan, and other *Sorbus* spp.

***Argyresthia semitestacella* (Curtis)**

A widespread species, the larvae feed on common beech.

***Argyresthia sorbiella* (Treitschke)**

Recorded from counties Dublin and Kerry, the larvae feed on rowan.

***Argyresthia spinosella* Stainton**

A widespread species, the larvae feed on blackthorn.

***Cedestis subfasciella* (Stephens)**

Recorded fom counties Clare, Cork and Wexford, the larvae feed on pines.

***Ocnerostoma friesei* Svensson**

Recorded from county Wexford, the larvae feed on Scots pine.

***Ocnerostoma piniariella* Zeller**

Recorded from county Cork, the larvae feed on Scots pine.

***Paraswammerdamia albicapitella* (Scharfenberg)**

A widespread species, the larvae feed on blackthorn.

***Paraswammerdamia lutarea* (Haworth)**

A widespread species, the larvae feed on hawthorns and rowan.

***Prays fraxinella* (Bjerkander)**

A widespread species, the larvae feed on common ash. Popularly known as the Ash Bud Moth.

***Pseudoswammerdamia combinella* (Hübner)**

A widespread species, the larvae feed on blackthorn.

***Swammerdamia caesiella* (Hübner)**

A widespread species but recorded mostly in the North of Ireland, the larvae feed on birches.

***Swammerdamia pyrella* (Villers)**

A widespread species, the larvae feed on hawthorns, apples and pears.

***Yponomeuta evonymella* (Linnaeus)**

A widespread species but not recorded from western Ireland, the larvae feed on bird cherry. Popularly known as the Bird-cherry Ermine.

***Yponomeuta malinellus* Zeller**

Recorded from counties Dublin, Galway and Laois, the larvae feed on apples. Popularly known as the Apple Ermine.

***Yponomeuta padella* (Linnaeus)**

A widespread species, the larvae feed on hawthorns, blackthorn and cherries. Popularly known as the Orchard Ermine.

***Ypsolopha parenthesella* (Linnaeus)**

A widespread species, the larvae feed on oaks, hornbeam, birches and common hazel.

***Ypsolopha scabrella* (Linnaeus)**

Recorded from counties Clare, Dublin and Tipperary, the larvae feed on *inter alia* apples and hawthorns.

***Ypsolopha ustella* (Clerck)**

A widespread species, the larvae feed on oaks.

***Ypsolopha vittella* (Linnaeus)**

A widespread species, the larvae feed on elms and common beech.

***Zelleria hepariella* Stainton**

A widespread species in the southern half of Ireland, the larvae feed on common ash.

ORTHOPTERA

Information from Marshall and Haes (1988) and O'Connor (2007).

***Meconema thalassinum* (DeGeer)**

Recorded from counties Clare, Galway, Kerry, Waterford, Wexford and Wicklow, a mainly carnivorous species which occurs in oak woodland and on a wide variety of other trees and bushes. Popularly known as the Oak Bush-cricket.

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FAUNISTIC DATA FOR THE GENUS *TETANOCERA* (DIPTERA: SCIOMYZIDAE) IN THE WEST OF IRELAND

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Abstract

Date-locality records for seven species of the genus *Tetanocera* (Diptera: Sciomyzidae) are presented for the west of Ireland (Co. Clare, Co. Galway, Co. Mayo, Co. Roscommon and Co. Westmeath). These data include five new records for Co. Galway, one for Co. Mayo, six for Co. Roscommon, one for Co. Clare and one for Co. Westmeath. Details on habitats, phenology and feeding behaviour are also provided.

Introduction

Marsh flies, also known as snail-killing flies (Sciomyzidae: Diptera), are small to medium (2 – 14mm) flies, of yellowish to brown colour, though some species are black, black and yellow or dark blue with orange legs (Rozkošný, 1999). Eyes are broadly separate and devoid of hairs. Postvertical setae are strong and always divergent. Oral vibrissae are never present and the antennae are usually porrect (Knutson and Lyneborg, 1965). There are distinct humeral, notopleural, presutural, supra-alar, postalar, dorso-central and scutellar setae on the thorax. The

wings have a well developed, unbroken costal vein and preapical bristles are present on all tibiae (Rozkošný, 1999).

In adults, there is a reduction in the number of spermathecae, from three to two (Marinoni and Mathis, 2000), but the most striking synapomorphy in the family is, however, the malacophagous habit of larvae (Berg, 1953; Knutson and Vala, 2002).

The genus *Tetanocera* is the most diverse genus of the Tetanocerini (the more derived of the two tribes that comprise the Sciomyzinae). Species of *Tetanocera* range from aquatic through semi-aquatic to terrestrial habitats and exploit a range of gastropod host / prey species (Foote, 1996a, 1996b, 1999). As such, the genus is of considerable importance from the perspective of bio-control of snail-borne trematode diseases of man and livestock and also the control of terrestrial gastropod pests of agricultural and horticultural systems.

Recent molecular analysis has employed *Tetanocera* as a model for the evolution of adaptive radiation from aquatic to terrestrial ecosystems and has concluded that the genus has invaded the terrestrial sphere on multiple occasions throughout its evolution (Chapman *et al*., 2006).

The current published data for *Tetanocera* distribution in Ireland is limited to the work of Chandler (1972), who considered field collected and museum specimens and more recent work by Speight (2004) on a case study farm in Co. Cork (see also Good, 2001, Speight 2001, Speight and Good, 2001a, 2001b for additional details on habitats and management history of the case-study farm). Chandler (*op. cit.*) recorded two species of *Tetanocera* in Co. Clare, one in Co. Galway, six in Co. Mayo, none in Co. Roscommon and one in Co. Westmeath. At the regional scale of Chandler, *Tetanocera ferruginea* Fallén is the most widespread species, occurring in eleven of 40 vice-counties. *Tetanocera arrogans* Meigen, *Tetanocera punctifrons* Rondani and *Tetanocera freyi* Stackelberg are the most restricted, each recorded from only one out of the 40 vice-counties. Speight (2004) recorded seven species of *Tetanocera* on the study farm in Co. Cork and highlighted habitat associations in addition to considering habitats where species were predicted to occur but were absent. In Britain, *Tetanocera* distribution records are summarized by Ball and McLean (1986) and the earlier work by Collin (1960) who listed species then known in Britain and provided a key to their determination.

The aim of this paper is to present date-locality data for seven species of *Tetanocera* collected in the west of Ireland from 1999-2007. In addition to the raw data, habitat associations are presented in Figure 1 and the phenology of the different species is given in Figure 2. Larval feeding behaviour and habitat associations are also provided. Many of the sites are turloughs (i.e. groundwater dependent seasonal lakes), but we differentiate between poor grassland "edge-communities" and sedge and wetland plant dominated "turlough-proper" communities. We include collections from wet woodlands, river flood plains, lake edges, drainage ditches and roadside verges.

Materials and methods

Collections were usually made with a standard sweep net (0.50m diameter, bag depth 0.67m, handle length 0.31m) and traditional mouth pooters. Captures of larvae and puparia were made with a standard d-shaped pond net (25cm diameter) and some adults were caught using yellow pan-traps (20cm diameter, height 50cm). Adult sciomyzids were identified using Rozkošný (1987).

Results

All records are for adults unless otherwise specified. PT indicates a pan-trap collection rather than a sweep-net as used in all other cases:

***Tetanocera arrogans* Meigen**

(A) Co. Galway

(1) Barna Woods, Barna M243242, 14♂♂ 9.vi.2000, *Alnus glutinosa* stand; ♀ 11.vii.2005, *Alnus glutinosa* stand.

(2) Ballindooley M306315 2♀♀ 18.vii.2000, grazed river edge; 2♀♀ 18.vii.2000, ungrazed river edge.

(3) Ballindooley M307314, ♀ 18.vii.2000, grazed drainage ditch edge; 3♂♂2♀♀ 18.vii.2000, ungrazed drainage ditch edge; ♂2♀♀ 12.viii.2000, ungrazed drainage ditch edge.

(4) Menlo M283283, ♀ 10.viii.2000, wet flush at river's edge.

(5) Dangan M2892721, ♂ puparium 17.xi.2000: collected in vegetation choked drainage ditch (Coldroom 30.xi.2000 (14 days), eclosion 10.v.2001, 180 days in puparium).

(6) Cregaclare South turlough, M4711, 10♂♂3♀♀ 15.vi.2004, *Carex nigra* zone; 4♂♂4♀♀ 15.vi.2004, *Magnocaricion* zone; 5♂♂3♀♀ 5.vii.2004 *Carex nigra* zone; 3♂♂5♀♀ 5.vii.2004, *Magnocaricion* zone; 5♂♂3♀♀ 16.vii.2004, *Carex nigra* zone; ♂2♀♀ 16.vii.2004 *Magnocaricion* zone; ♂2♀♀ 27.vii.2004, *Carex nigra* zone; 4♀♀ 27.vii.2004 *Magnocaricion* zone; 2♂♂ 9.viii.2004, *Carex nigra* zone; 2♀♀ 9.viii.2004, *Magnocaricion* zone.

(7) Termon North turlough R4197, 2♀♀ 15.vi.2004, *Carex nigra* zone; ♂ 15.vi.2004, *Phalaris-Eleocharis* zone; 2♀♀ 5.vii.2004, *Carex nigra* zone; ♂♀ 5.vii.2004; *Phalaris-Eleocharis* zone; 2♀♀ 27.vii.2004, *Carex nigra* zone.

(8) Lough Mannagh turlough M4001, 2♀♀ 17.vi.2004, *Carex elata* zone; ♂ 19.vii.2004, *Carex nigra* zone; ♂♀ 19.vii.2004 *Carex elata* zone.

(9) Killeenavarra turlough M4212, ♀ 25.vi.2004, *Carex nigra* zone; 2♂♂ 25.vi.2004, poor grassland zone; ♀ 29.vi.2004, *Carex nigra* zone; 2♀♀ 29.vi.2004, *Eleocharis palustre* zone; ♀ 9.vii.2004, *Carex nigra* zone; 7♂♂♀ 9.vii.2004, *Eleocharis palustre* zone; ♀ 19.vii.2004, *Eleocharis palustre* zone; ♀ 11.vii.2005, *Carex nigra* zone; ♀ 15.viii.2005 *Carex nigra* zone; ♂ puparium: Collected 15.iii.2006 (Emerged 7.iv.2006), *Carex nigra* zone; ♀ puparium collected 15.iii.2006 (Emerged 25.iv.2006), *Carex nigra* zone; ♀ collected 8.xi.2005 (Cold room 18.xi.2005 (3 days) eclosion 25.v.2006: pupa: 197 days), *Carex nigra* zone; ♂ puparium collected 15.iii.2006 (Emerged 25.v.2006), *Carex nigra* zone.

(10) Ballinduff turlough M4608, 2♂♂ 6.vii.2004, *Phalaris arundinacea* zone; 2♀♀ 19.vii.2004, *Phalaris arundinacea* zone; ♂ 27.vii.2004, *Phalaris arundinacea* zone; 2♂♂2♀♀ 10.viii.2004 *Phalaris arundinacea* zone; ♀ puparium 2.iii.2006, collected floating on the open water, (Emerged 23.iii.2006).

(B) Co. Mayo

(1) Tawnagh, Claremorris M330795, ♀ 8.vii.2001, wet grassland.

(2) Skealoghan turlough; M2563; ♂ 9.vi.2004, poor grassland; ♂ 16.vi.2004, *Carex nigra* zone; ♀ 30.vi.2004, unflooded calcareous grassland; ♂ 30.vi.2004, *Eriophorum angustifolium* zone;

♀ 7.vii.2004 *Carex nigra* zone; ♂3♀♀ 14.vii.2004, *Carex nigra* zone; ♀ 4.viii.2004, *Carex nigra* zone; ♀ 10-14.vii.2006, PT, *Carex nigra* zone; 8♂♂ 19.vii.2006, *Carex nigra* zone; ♂3♀♀ 21-27.vii.2006, PT, *Eriophorum angustifolium* zone; 3♂♂ 21-27.vii.2006, PT, sedge fen zone; ♀ 21-27.vii.2006, PT, sedge heath zone; 3♂♂2♀♀ 21-27.vii.2006, PT, *Carex nigra* zone; ♀ 27-3.viii.2006, PT, *Eriophorum angustifolium* zone; ♂ 27-3.viii.2006, PT, *Carex nigra* zone; ♂ 10-17.viii.2006, PT, *Carex nigra* zone.

(3) Ardkill turlough M2763, 3♂♂♀ 21.vi.2004, *Phalaris arundinacea* zone; 2♀♀ 21.vi.2004, *Eleocharis palustre* zone; ♀ 21.vii.2004, *Carex nigra* zone; ♂ 21.vii.2004, *Phalaris arundinacea* zone; 2♂♂3♀♀ 4.viii.2004, *Carex nigra* zone; 3♀♀ 4.viii.2004, *Phalaris arundinacea* zone; ♂♀ 4.viii.2004, *Eleocharis palustre* zone; ♀ 16.viii.2004, *Carex nigra* zone; ♂ 16.viii.2004, *Eleocharis palustre* zone

(C) Co. Roscommon

(1) Ballinturly turlough M8460, ♀ 1.vii.2004, *Carex nigra* zone; 2♀♀ 22.vii.2004, *Eleocharis palustre* zone.

(2) Lough Croan turlough M8849, ♂ 12.vii.2004, *Carex nigra* zone; ♀ 12.vii.2004 *Carex rostrata* zone; ♂2♀♀ 12.vii.2004, *Eleocharis–Glyceria* zone; ♀ 22.vii.2004 *Carex rostrata* zone; 2♀♀ 22.vii.2004, *Eleocharis–Glyceria* zone; 3♀♀ 5.viii.2004, *Eleocharis–Glyceria* zone; ♂ 12.vii.2005, *Carex nigra* zone.

***Tetanocera elata* (Fabricius)**

(A) Co. Galway

(1) Caherlistrane M323554, 2♂♂ 27.ix.2002, ungrazed wet grassland; ♀ 7.ix.2006, ungrazed wet grassland.

(2) Killeenavarra turlough M4212, ♀ 10.viii.2004, poor grassland.

(3) Connemara National Park L7558, ♂ 16.viii.2006, field of *Juncus*.

(4) Connemara National Park L753579, ♀ 22.vi.2007, track edge.

(5) Spiddal M126244, ♀ 6.ix.2006, edge of Shannawoneen Wood.

(B) Co. Mayo

(1) Edge of Lough Nanannagh M353783, ♂♀ 22.viii.2002.

(2) Ardkill turlough M2763, 3♂♂ 16.viii.2004, *Phalaris arundinacea* zone.

(3) Skealoghan turlough M2563, ♀ 21.vii.2004, *Eriophorum angustifolium* zone; ♀ 28.vii.2004, poor grassland zone; ♀14-21.vii.2006, PT, unflooded calcareous grassland zone; ♂ 25-1.ix.2006, PT, poor grassland zone.

(C) Co. Roscommon

(1) Newbridge M716512; ♀ 8.ix.2006, fallow potato field.

***Tetanocera ferruginea* Fallén**

(A) Co. Galway

(1) Barna Woods, Barna M243242, ♂ 9.vi.2000, *Alnus glutinosa* stand.

(2) Ballindooley M307314, ♂ 12.viii.2000, grazed drainage ditch edge; ♂ 12.viii.2000, ungrazed drainage ditch edge; 2♂♂ 29.viii.2000, ungrazed drainage ditch edge.

(3) Menlo M283283, ♂10♀♀ 10.viii.2000, wet flush at river's edge; ♀ 3rd instar larva collected 29.ix.2000 (Pupa 19.x.2000, emerged 12.xi.2000), in a shallow pool; ♂ puparium collected 29.ix.2000 (Emerged 12.x.2000), in a shallow pool.

(4) Coole Lake, Coole M432042, ♀ 6.v.2001, water (turlough) edge on grazed vegetation.

(5) Cregaclare South turlough M4711, 4♂♂2♀♀ 15.vi.2004, *Carex nigra* zone; ♀ 15.vi.2004, *Magnocaricion* zone; 3♂♂ 5.vii.2004, *Carex nigra* zone; ♂♀ 5.vii.2004, *Magnocaricion* zone; 3♂♂6♀♀ 16.vii.2004, *Carex nigra* zone; ♂♀ 16.vii.2004, *Magnocaricion* zone; 2♂♂4♀♀ 27.vii.2004, *Carex nigra* zone; ♀ 27.vii.2004, *Magnocaricion* zone; ♂♀ 9.viii.2004, *Carex nigra* zone; ♀ 30.viii.2004, *Carex nigra* zone.

(6) Lough Mannagh turlough M4001, 3♂♂ 17.vi.2004, *Carex elata* zone; ♂♀ 6.vii.2004, *Carex elata* zone; ♀ 19.vii.2004, *Carex elata* zone; ♂♀ 3.viii.2004, *Carex elata* zone; 2♂♂3♀♀ 9.viii.2004, *Carex elata* zone; ♂ 31.viii.2004, *Carex elata* zone; ♀ 20.v.2005, *Carex nigra* zone.

(7) Ballinduff turlough M4608, ♂ 17.vi.2004, *Phalaris arundinacea* zone; ♂ 28.viii.2002.

(8) Killeenavarra turlough M4212, ♀ 9.vii.2004, *Eleocharis palustre* zone; ♀ 15.viii.2005, *Carex nigra* zone.

(9) Croaghill M6071, ♀ 12.vii.2004, *Eleocharis palustre* zone.

(10) Oranbeg M3824, 5♂♂ 11.v.2005, disused quarry.

(11) Lismanny (close to Laurencetown), Ballinasloe M264892, 2♂♂ 14.ix.2006, very lightly grazed callow.

(B) Co. Mayo

(1) Ungrazed turlough (Moran's Carrowkeel), Ballinrobe M217614, ♂ 9.v.2001; 3♀♀ 18.v.2001; ♂ 28.vi.2001.

(2) Tawnagh, Claremorris M330795, ♂ 15.vii.2001; ♂♀ 8.vii.2001, wet grassland.

(3) Skealoghan turlough, Ballinrobe M2563, ♂ 29.ii.2002; 8♂♂ 29.viii.2002; ♂ puparium: collected 6.xii.2005 (Emerged 9.i.2006), in *Carex nigra* zone; ♀ 19.vii.2006, *Carex nigra* zone; ♂ 14-21.vii.2006, PT, sedge heath zone; ♂♀ 14-21.vii.2006, PT, *Carex nigra* zone; ♀ 21-27.vii.2006, PT, *Eriophorum angustifolium* zone; ♂♀ 21-27.vii.2006, PT, sedge heath zone; ♂2♀♀ 21-27.vii.2006, PT, *Carex nigra* zone; ♀ 3-10.viii.2006, PT, poor grassland zone; ♀ 3-10.viii.2006, PT, sedge fen zone; ♀ 3-10.viii.2006, PT, sedge heath zone; 2♂♂ 3-10.viii.2006, PT, *Carex nigra* zone; 2♀♀ 17-25.viii.2006, PT, *Carex nigra* zone; ♀ 8.ix.2006, *Carex nigra* zone; ♀ 25-1.ix.2006, unflooded calcareous grassland zone.

(4) Moran's turlough, Ballinrobe M217614, 2♂♂ 15.viii.2002, temporary pond zone.

(5) Edge of Lough Nanannagh M353783, ♂ 19.viii.2002; ♀ 22.viii.2002.

(6) Ardkill turlough M2763, ♂ 21.vi.2004, *Eleocharis palustre* zone; ♀ 16.viii.2004, *Eleocharis palustre* zone; ♀ 17.ix.2004, *Eleocharis palustre* zone.

(C) Co. Roscommon

(1) Lough Croan turlough M8849, ♂♀ 10.vi.2004, sedge zones; 4♂♂♀ 29.vi.2004, *Carex rostrata* zone; ♂ 29.vi.2004, *Eleocharis–Glyceria* zone; 2♂♂ 12.vii.2004, *Carex rostrata* zone; 2♂♂♀ 12.vii.2004, *Eleocharis–Glyceria* zone; 4♂♂3♀♀ 22.vii.2004, *Carex rostrata* zone; ♀ 22.vii.2004, *Eleocharis–Glyceria* zone; ♂ 5.viii.2004, *Carex rostrata* zone; ♂ 20.viii.2004, *Carex rostrata* zone; ♀ 3.ix.2004, *Carex rostrata* zone; ♂ puparium 23.xi.2004 (Cold room 5.i.2005 (14 days) eclosion 3.ii.2005: 41 days as pupa) *Carex rostrata* zone; ♀ 16.viii.2005, *Carex rostrata* zone; 2♀♀ 16.viii.2005, *Eleocharis–Glyceria* zone; ♀ 29.viii.2005, *Carex rostrata* zone; ♀; 29.viii.2005, *Eleocharis–Glyceria* zone;

(2) Ballinturly turlough M8460, 2♂♂5♀♀ 1.vii.2004, *Eleocharis palustre* zone; ♂ 12.vii.2004, *Carex nigra* zone; 6♂♂2♀♀ 12.vii.2004, *Eleocharis palustre* zone; 5♂♂8♀♀ 22.vii.2004, *Eleocharis palustre* zone; 2♀♀ 5.viii.2004, *Carex nigra* zone; 3♀♀ 5.viii.2004, *Eleocharis palustre* zone; 2♀♀ 3.ix.2004, *Eleocharis palustre* zone; ♂ 25.vii.2005, *Eleocharis palustre* zone; ♂ 29.viii.2005, *Carex nigra* zone.

(D) Co. Clare

(1) Carran turlough R2999, 2♂♂♀ 24.v.2005, sedge zones.

(E) Co. Westmeath

(1) Hare Island, Lough Ree, Athlone N473046, 9♂♂ 10.ix.2006, lake shore.

(2) Lough Ree near Coosan Point, Athlone N451041, 5♂♂♀ 10.ix.2006, wet flush (fed by underground spring) on edge of the lough.

(2) Lake shore close to Hill of Berries, Lough Ree, Athlone N440002, ♂10.ix.2006.

***Tetanocera freyi* Stackelberg**

(A) Co. Galway

(1) Barna Woods, Barna M243242, ♂ 9.vi.2000, *Alnus glutinosa* stand.

***Tetanocera fuscinervis* Zetterstedt**

(A) Co. Roscommon

(1) Newbridge M716512, ♂ 8.ix.2006, fallow potato field.

(2) Lough Croan turlough M8849, ♂ 25.vii.2005, *Carex nigra* zone.

***Tetanocera hyalipennis* Roser**

(A) Co. Galway

(1) Barna Woods, Barna M243242, 6♂♂3♀♀ 9.vi.2000, *Alnus glutinosa* stand; ♂♀ 11.vii.2005, *Alnus glutinosa* stand.

(2) Cregaclare South turlough M4711, ♀ 5.vii.2004, *Carex nigra* zone; ♀ 27.vii.2004, *Magnocaricion* zone; ♂ 30.viii.2004, *Magnocaricion* zone.

(3) Lough Mannagh turlough M4001, ♀ puparium collected 30.xi.2005 (Emerged 23.i.2006), in *Carex nigra* zone.

(B) Co. Mayo

(1) Skealoghan turlough, Ballinrobe M2563, 2♂♂ 29.viii.2002.

(2) Ardkill turlough M2763, ♀ 4.viii.2004, *Phalaris arundinacea* zone.

(3) Tawnagh, Claremorris M330795, ♂ 8.vii.2001, wet grassland.

(C) Co. Roscommon

(1) Lough Croan turlough M8849, ♀ 12.vii.2004, *Eleocharis–Glyceria* zone.

(2) Ballinturly turlough M8460, 2♀♀ 12.vii.2004, *Eleocharis palustre* zone; ♀ 22.vii.2004, *Eleocharis palustre* zone.

(D) Co. Westmeath

(1) Hare Island, Lough Ree N473 046, ♂ 10.ix.2006, lake shore.

***Tetanocera robusta* Loew**

(A) Co. Galway

(1) Connemara National Park L753 579, 2♂♂2♀♀ 22.vi.2007, track edge.

(B) Co. Mayo

(1) Skealoghan turlough M2563, ♀ 23.v.2002.

(C) Co. Roscommon

(1) Lough Croan turlough M8849, ♀ 29.vi.2004, *Carex rostrata* zone; 2♀♀ 29.vi.2004, *Eleocharis–Glyceria* zone; ♂♀ 22.vii.2004, *Carex rostrata* zone.

(D) Co. Clare

(1) Ballyvelaghan M2711, ♂ 6.viii.2001.

A summary of records of *Tetanocera* to date (including the present paper) from counties Cork, Clare, Galway, Mayo, Roscommon and Westmeath are shown in Table 1. For convenience, new county records in the present study are shown in bold.

A summary of the faunistic composition of each habitat type is presented in Figure 1. Due to unequal sampling efforts, different sampling techniques and a mixture of qualitative and quantitative sampling strategies, it is necessary to look at the relative abundance of each species in a particular habitat rather than the absolute abundances. The proportional abundances show

that there are quite different community constants and associates in each habitat type, which reflect the autecology of each particular species. It should be noted, however, that the present data reflect only the genus *Tetanocera* and other Sciomyzidae may be more prominent in the community as a whole – *Ilione albiseta* and *Pherbina coryleti* on turloughs, for example.

We summarize flight periods in the form of phenology plots (from the present data see Figure 2) and larval resources (from previously published studies) to highlight the autecological differences between species in the discussion. With respect to flight period, pan traps do not give exact capture date as they were emptied only once weekly in the present study.

Discussion

Considerable interest has arisen in the Family Sciomyzidae since Berg (1953) first convincingly documented the malacophagous feeding behaviour of their larvae. This behaviour has made the family of interest for the selection of biological control agents of snail intermediate hosts of trematode diseases of livestock (fascioliasis) and humans (schistosomiasis) and of gastropod pests of agricultural/horticultural systems. Over the past 30 years in Ireland, such research (Hope-Cawdery and Lindsay, 1977; Hope-Cawdery, 1981; Lindsay, 1982; Gormally, 1985a, 1985b 1987, 1988a, 1988b; McDonnell *et al.*, 2005, 2007; McDonnell and Gormally, 2007) has focused on the control of *Galba truncatula* (Müller), the intermediate host of fascioliasis.

More recently, Sciomyzidae have been suggested as bioindicators on agricultural land (Speight, 2001, 2004) and habitat occupancy has become a major focus of research. In the present study we show that in the west of Ireland, *T. robusta*, *T hyalipennis*, *T. fuscinervis* and *T. freyi* have a rather low density in a relatively restricted range of habitats. On the other hand, *T arrogans*, *T. ferruginea* and *T. elata* occupy a greater range of habitats, but whereas *T. arrogans* and *T. ferruginea* have relatively high densities, *T. elata* does not (Table 2).

The data given in this paper will provide researchers with faunistic information that will aid more informed decisions to be made on sciomyzids as bioindicators of sustainable agricultural practice and as potential augmentative and conservation biocontrol agents.

(1) *Tetanocera arrogans* Meigen, 1830

A total of 206 specimens were collected for this Palaearctic species in Cos Galway, Mayo and Roscommon. According to Knutson and Vala (2002) this species is a parasitoid/predator of hygrophilous, semi-terrestrial Succineidae snails. They suggest that it may also feed on non-operculate terrestrial snails. It is thought to be multivoltine and overwinter as a puparium, a phenology we can confirm since the puparium that we collected on the 17th November required a period of cold exposure (4°C for 14 days) for emergence (a trait typical of this phenological group; Berg *et al*., 1982), whereas the later post-winter collected puparium on 2nd March required no such exposure. This species appears to be a fundamental species of grazed river edge, turlough proper, wet woodland and wet grassland habitats. The flight period of adults collected in this study was from 9 June to 16 August (Fig. 2). These are the first county records of this species for Galway, Mayo and Roscommon.

(2) *Tetanocera elata* (Fabricius), 1781

Seventeen individuals of this Palaearctic species were collected in Cos Galway, Mayo and Roscommon. *T. elata* is the only Irish sciomyzid known to feed exclusively on slugs and has obvious biocontrol potential in this regard. Knutson *et al*. (1965) postulated that this species was multivoltine and overwintered in the puparium. We collected adults from 21 July through to 8 September. Although not commonly collected by us in the west of Ireland, Ball and McLean (1986) found this species to be the most common sciomyzid throughout the United Kingdom and Speight (2004) collected it repeatedly in Malaise and emergence traps on productive and disused land on a farm in Co. Cork. We found that the species occupies a range of habitats from a lake edge and wet grassland to Atlantic Oak woodland edge to a fallow potato field. However, the species never attained a high abundance. On turloughs, it was an associate species of edge habitats, but only occasionally on turlough proper habitats. It may be that the species is averse to the wet climate of the west of Ireland or, it is possible that it always occurs in low densities, but over a range of habitats making it "common" at the regional scale. These are the first county records for Galway and Roscommon.

(3) *Tetanocera ferruginea* Fallén, 1820

A total of 223 specimens of the Holarctic *T. ferruginea* were collected in Cos Galway, Mayo, Roscommon, Clare and Westmeath. This species is one of the best studied sciomyzids (Disney, 1964; Vala and Haab, 1984; Manguin *et al.*, 1986; Manguin, 1989; Manguin and Vala, 1989; Foote, 1999 and McDonnell and Gormally, 2007) and is a predator of non-operculate snails at or just below the water surface, on emergent vegetation, and occasionally of snails exposed on moist surfaces (Knutson and Vala, 2002). It is multivoltine and overwinters in the puparium (Vala and Haab, 1984) a phenology that we confirm with a winter collected puparium requiring a period of cold exposure to trigger emergence. This species had the widest habitat occupancy in the present study, occurring in 8 out of 12 habitats. It was the sole *Tetanocera* recorded in a disused quarry and grazed drainage ditch. Also, it appears to be a community constant on an ungrazed drainage ditch and turlough proper habitats. The species is a fundamental species of ungrazed river edge and an occasional species on turlough edge and wet woodlands. The flight period of adults collected during our surveys ranged from 6 June to 17 September (Fig. 2). These are the first county records for Galway and Roscommon.

(4) *Tetanocera freyi* Stackelberg, 1963

To the best of the authors' knowledge, this Holarctic species has been recorded only twice previously in Ireland. Chandler (1971) swept a male and female from a stand of *Phragmites communis* Trin. on the shores of Ross Bay (Co. Kerry) on 30 June 1969 and an additional female on 3 July in a marshy field beside Lough Caragh (Co. Kerry). Speight and Nash (1977) then reported collections of additional males and females (exact number not specified) from the thinly vegetated lake shore of Hare Island, Lough Ree (Co. Westmeath) on 29 May 1976. However, since this species can only be identifed with certainty using genitalic characters of the male (Rozkošný, 1987), female records of this species must be treated with caution. Our record is of a single male which was swept in a wet alder woodland on 9th June and represents a new record for Co. Galway. It is of interest to point out that we also sampled on the shoreline of Hare Island during the summer of 2006 with the hope of finding additional specimens but none were found. In the U.K., *T. freyi* is of notable conservation importance and is classified as a Red

Data Book species (Ball and Mc Lean, 1986). It also appears to be rare in Ireland. The larval biology of this species is unknown.

(5) *Tetanocera fuscinervis* (Zetterstedt), 1838

Two specimens of this Holarctic species were collected, one in a turlough (25th July) and the other in a fallow potato field (8th September), in Co. Roscommon. Previous records of *T. fuscinervis* are predominantly from the western half of the island (Speight and Nash, 1977). It is a 'shoreline' predator/saprophage of non-operculate, primarily freshwater snails exposed on moist surfaces by receding or fluctuating water levels. It also takes prey that are foraging or migrating in such microhabitat (Knutson and Vala, 2002). A description of the life history of this species is given by Foote (1996a). *Tetanocera fuscinervis* is multivoltine and overwinters in the puparium (Knutson *et al.*, in prep.). Our captures were very rare and this is the first county record of this species in Roscommon.

(6) *Tetanocera hyalipennis* von Roser, 1840.

Twenty-four specimens of this Palaearctic species were collected in Co. Galway, Co. Mayo, Co. Roscommon and Co. Westmeath in a wet alder woodland, a lake shore and on turloughs. In all three cases, it is probably best described as a community associate or occasional species. It belongs to the same feeding behavioural group as *T. fuscinervis*, i.e. a 'shoreline' predator/saprophage of non-operculate, primarily freshwater snails (Knutson and Vala, 2002). The species also overwinters in the puparium and is multivoltine (Knutson *et al.*, in prep.). During our collections, the flight period of this species in the west of Ireland was from 9 June to 30 August (Fig. 2). These are the first county records for Galway, Roscommon and Westmeath.

(7) *Tetanocera robusta* Loew, 1847

Eleven individuals were collected in Co. Galway, Co. Roscommon, Co. Mayo, and Co. Clare all of which were swept on turloughs where it is best described as an occasional species of the turlough proper habitat. As with *T. ferruginea*, this Holarctic species is a predator of non-operculate snails at or just below the water surface, on emergent vegetation, and occasionally of snails that are exposed on moist surfaces (Knutson and Vala, 2002). Its phenology however, is univoltine, overwintering as a pupa (Vala, 1989). The flight period of adults was from 23 May

to 22 July. These are the first county records for Roscommon, and Clare.

We did not record *Tetanocera punctifrons* Rondani, 1868, *Tetanocera silvatica* Meigen, 1830 and *Tetanocera phyllophora* Melander, 1920 during our collections. The latter is a woodland species and there appear to be only four Irish records (Speight and Nash, 1977). *T. silvatica* also appears to be rare and has been collected mainly at wooded stream-margins and fen car (Speight and Nash, 1977). *Tetanocera montana* Day, 1881 has only recently been discovered in Ireland (Speight, 2007). Speight reports collecting three specimens, two males from a Malaise trap in seasonally-flooded, mesotrophic freshwater marsh and a female from a Malaise trap in seasonally-flooded, unimproved, disused, *Deschampsia/Molinia* grassland in Co. Cork.

In conclusion, we suggest that future sampling of *Tetanocera* and indeed Sciomyzidae in general, should utilize additional collecting methods such as Malaise traps, emergence traps and light traps, in addition to atypical sampling strategies e.g. pitfall trapping, holding shoreline material in the laboratory for adult emergence (Przhiboro, 2001), and snail-baited traps (Chock *et al*., 1961). Such an approach may help clarify the Irish distribution of rare species such as *T. freyi* and *T. silvatica* in addition to providing finer detail on habitat specificity.

Readers are directed to Rozkošný (1987) and Vala (1999) for suitable keys to Irish species of this genus.

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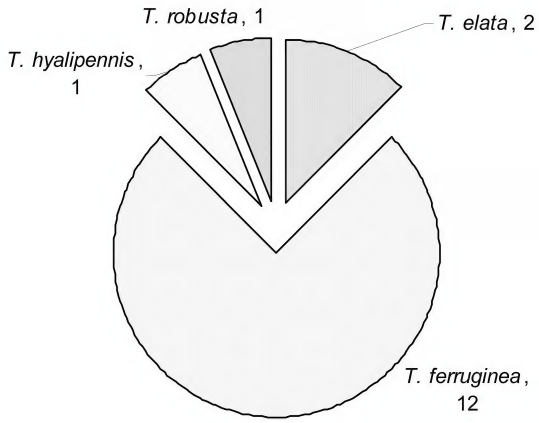
	County					
	Cork	**Galway**	**Mayo**	**Clare**	**Roscommon**	**Westmeath**
Chandler (1972)	*T.rob, T.e, T.ph, T.f, T.hyal, T.fus**	*T.rob*	*T.e, T.fer, T.frey*(?),*T.fus, T.hyal, T.rob,*	*T.p, T.fer*		*T.fer*
Speight (2004)	*T.a, T.e, T.fer, T.fus, T.hyal, T.p, T.r*					
Present study		***T.a, T.e, T.fer, T.frey, T.hyal,*** *T.rob*	***T.a,*** *T.e, T.fer, T.hyal, T.rob*	*T.fer,* ***T.rob***	***T.a, T.e, T.fer, T.fus, T.hyal, T.rob***	*T.fer,* ***T.hyal***

* Recorded as *Tetanocera unicolor* in Chandler (1972).

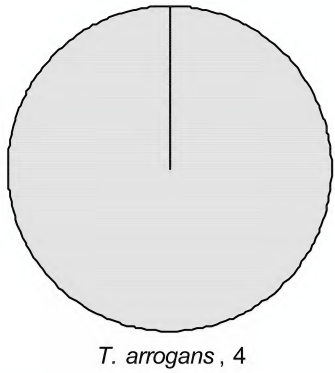
(?) Doubtful record in Chandler (1972).

TABLE 1. County records for Cork, Galway, Mayo, Clare, Roscommon and Westmeath from published literature and the present study. New county records in the present study are in bold. Key: *T.a = T. arrogans, T.e = T. elata, T.fer = T. ferruginea, T.frey = T. freyi, T.fus = T. fuscinervis, T.hyal = T. hyalipennis, T.p = T. punctifrons, T.ph = T. phyllophora, T.rob = T. robusta.*

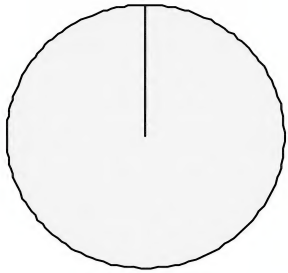
a) Lake edge



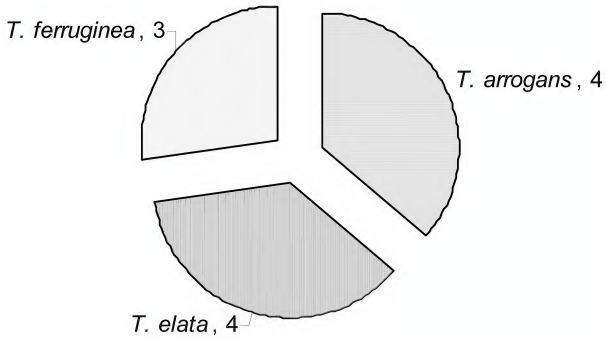
b) River edge (grazed)



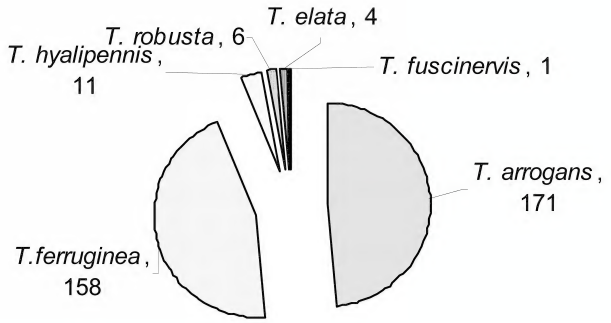
c) River edge (ungrazed)



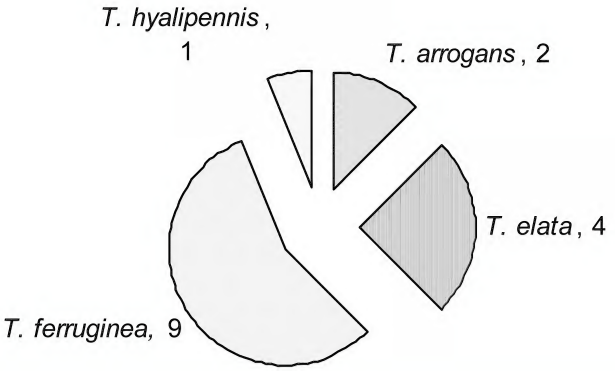
d) Turlough edge



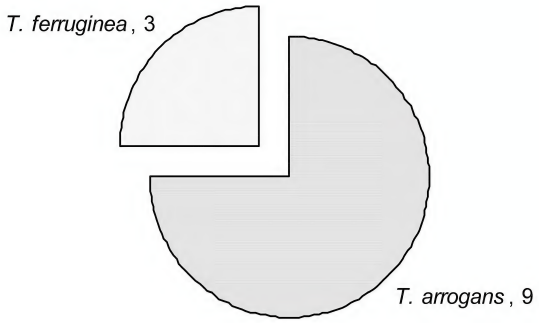
e) Turlough proper



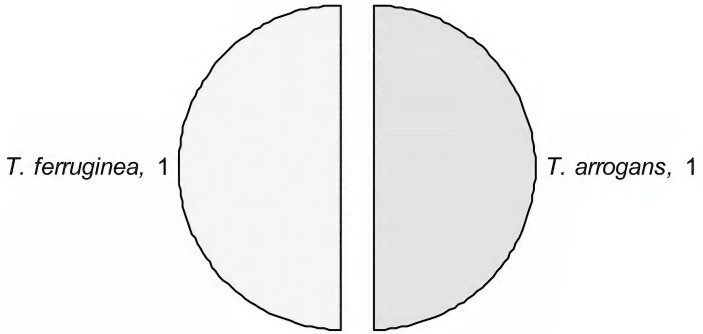
f) Wet grassland



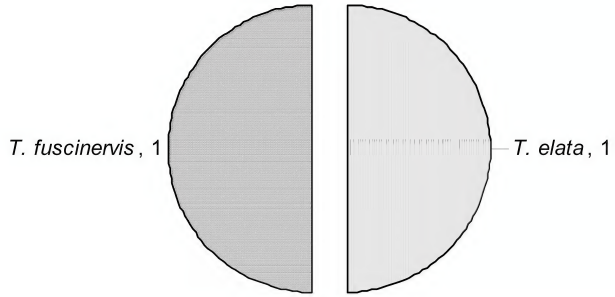
g) Drainage ditch (ungrazed)



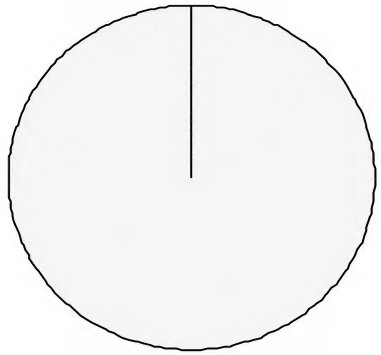
h) Drainage ditch (grazed)



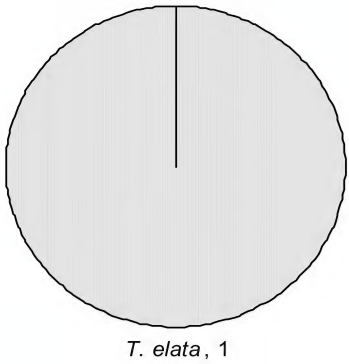
i) Fallow potato field



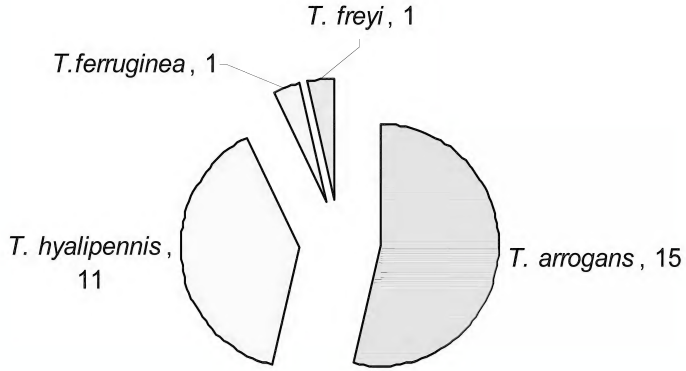
j) Disused quarry



k) Atlantic oak woodland edge



l) Wet woodland



Species	Month											
	Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
T. arrogans	------	------	---			——	——	——			----	------
T. elata							——	——	——			
T. ferruginea						——	——	——	——	3 ------	------	
T. freyi						A						
T. fuscinervis								——	——			
T. hyalipennis	------					——	——	——			-	------
T. robusta					——	——	——					

FIGURE 2. Partial phenology plot summarizing the flight-period of *Tetanocera* and dates of field-collected puparia and larvae from the present study. Solid lines and "A" = Adult collection; broken lines = Puparia collection and "3" = 3rd instar collection.

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THE CRANEFLIES (DIPTERA) OF IRELAND. PART 5. TIPULIDAE

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Abstract

The Family Tipulidae in Ireland is represented by 57 species. Three species, *Nephrotoma crocata* (Linnaeus), *Tipula* (*Platytipula*) *melanoceros* Schummel and *Tipula* (*Vestiplex*) *montana* Curtis, previously considered as doubtful are now confirmed as Irish species. A lectotype is designated for *Tipula dispar* Haliday, a junior synonym of *T. pagana* Meigen, from the original Haliday material preserved in the National Museum of Ireland collections.

Introduction

This is the fifth of a series of six papers, (parts 1 to 4 and 6 respectively in Ashe *et al.* (1995, 1998, 2005a, b, 2007), which aims to provide a detailed review of the records, literature and distribution of all the Irish cranefly species.

The first paper to include records of Irish Tipulidae is Haliday (1833) who recorded 12 species, (1 *Dolichopeza*, 11 *Tipula*) – see Table 1, from the vicinity of Holywood, County Down. Hogan and Haliday (1855) include a couple of records only. In Walker (1856), there are 26 species (1 *Dolichopeza*, 25 *Tipula* but five species of *Nephrotoma* are included under *Tipula*) from Ireland, indicated by a "(I.)" symbol, some of which are unresolved but evidently based on

information supplied by Haliday.

A few faunistic papers from the late 19th Century (Carpenter, 1894, 1895; Scharff and Carpenter, 1899) and the early 20th Century (Anon., 1903, 1910; Carpenter, 1903, 1904, 1905, 1908, 1909, 1911, 1912, 1920; Grimshaw and Halbert, 1907; Yerbury, 1902) include the occasional tipulid record though some of these papers concern species of agricultural importance (i.e. damage caused by leatherjacket larvae). In the substantial Clare Island Survey, Grimshaw (1912) reported 14 Tipulidae species. For the period between 1921 and the 1980's most of the relevant literature (Audcent, 1932; Beirne, 1949, 1951; Berg, 1975; Coe,1950; Edwards, 1929; Halbert, 1922; Healy, 1975a, b; Hobby and Smith, 1961; Nash, 1989; Parmenter, 1942; Smith, 1952; Speight and Healy,1975; Stelfox, 1968, 1970; Stubbs, 1976) contained from one to a few records only and include common species, first published Irish records, and some repetition of previously published records. A few records of adult Tipulidae forming a component of the diet of Irish bat species is reported in Moffat (1900, 1922, 1931, 1941). There are also further reports of tipulid larvae as agricultural pests in several papers (Carroll, 1953; Edwards, 1967; Grennan, 1966; Willis, 1963, 1965).

An exception to the norm was the more substantial paper of Feeney (1968), specifically on the Tipulidae, which included records of 26 species, several of which were new to Ireland. Other substantial papers, which included quite a few new records, or species new to Ireland, include Ashe *et al*. (1991), Blackith *et al*. (1991) and Hancock (1990).

Occasionally there are published papers from aquatic surveys (rivers, lakes, etc.) which report the presence of *Tipula* larvae but in all cases that we know of they are not identified to species and are usually listed as "*Tipula* sp." and therefore no attempt has been made to list the literature.

Stubbs (1992) published an atlas of the Tipulidae of the British Isles which included maps of every known species of which there are 44 Irish species included. The maps utilize 10km grid squares within the respective national grid for Britain and for Ireland. Records are indicated by dots on the maps with an open dot indicating a pre 1960 record and a black dot indicating a post 1960 record. The maps were hand-plotted from rough drafts which included

information from computer databases, published papers and handwritten record cards. In many cases, records lacked grid references and these were calculated when preparing the maps. Of the 44 maps which include dots for Ireland, there are 31 which include one or more dots for which at present we do not have any meaningful data (i.e. date collected, locality, collector) though in most cases the county can be determined and a two figure grid reference can be calculated. For example, in *Dolichopeza albipes* (Ström) there are four black dots on the map in Stubbs (1992) for which we have no data - these are the dot in County Antrim to the west of Belfast, the dot in the Burren (County Clare), a dot to the south of Killarney in County Kerry and a dot which is probably in County Waterford. No attempt has been made to plot the missing dots for *D. albipes*, or for any of the other species, on the UTM maps in this paper. It is not possible at present to access all the original data used to prepare these maps in Stubbs (1992) but it is hoped to rectify this in the near future when all of the original data is computerised.

A checklist of the 18 aquatic Irish Tipulidae is given in Ashe O'Connor and Murray (1998). The most recent checklist is Chandler (1998) which lists all the Irish species of Tipulidae included in this work except *Tipula* (*Odonatisca*) *nodicornis* Meigen which was added recently by Langton (2005). However *Nephrotoma crocata* (L.), *Tipula* (*Lunatipula*) *vernalis* Meigen, *T.* (*Platytipula*) *melanoceros* Schummel, *T.* (*Pterelachisus*) *pabulina* Meigen and *T.* (*Vestiplex*) *montana* Curtis are listed in Chandler (1998) as "?+" indicating doubtful 19th Century Irish records based on Walker (1856) which require confirmation. Three of these doubtful Irish species (*crocata*, *melanoceros* and *montana* - see comments under each species) have now been confirmed as Irish with new records for *crocata* and *melanoceros* and a re-assessment and acceptance of the Irish 19th century records of *montana*. There is no new material of *vernalis* or *pabulina* and the records of both species in Walker (1856: 324-325) are considered unreliable as there are no Irish specimens of either species in the National Museum of Ireland and consequently both species are removed from the Irish list.

In Theowald (1978), there are only a few species listed for Ireland. In the Palaearctic Catalogue of Oosterbroek and Theowald (1992), many Irish species, listed under the

abbreviation IRE, are included though for some of the widespread European species the countries are not specified.

The story of the Irish Ctenophorinae is rather remarkable with the first published record, for *Tanyptera* (*Tanyptera*) *atrata atrata* (Linnaeus) in Grimshaw (1908) based on an early 19th Century record in a Haliday manuscript. It is somewhat surprising that Haliday never published the record or never gave the data for inclusion in Walker (1856). This was the only ctenophorine on the Irish list until O'Connor and Speight (1987) added *Dictenidia bimaculata* (Linnaeus) which was followed a few years later by Speight and Nash (1993) who added *Ctenophora* (*Cnemoncosis*) *ornata* Meigen and *C.* (*Ctenophora*) *pectinicornis* (Linnaeus). O'Connor and Ashe (1998) added a second record of *C. pectinicornis* when a specimen from 1932 was discovered in a box of insects donated to the National Museum of Ireland. Speight (2004) added further records of *D. bimaculata* and *T. atrata atrata*. Given that the Ctenophorinae are amongst the largest and most spectacular species of insect, it is very surprising that some of these species were not collected sooner and that there are not more specimens, particularly from areas such as Killarney which are presumed to have been well worked. In the case of two ctenophorine craneflies species, *C. ornata* and *C. pectinicornis*, it seems that the loss of most of our ancient woodlands has caused these species to be confined to a few surviving pockets of suitable habitat.

Materials and methods

The Irish national grid reference (six, four or two figure reference) is included where possible followed by the Universal Transverse Mercator (UTM) 50km grid reference in parentheses. The method used to obtain the UTM references is described in Rasmont *et al.* (1986). Some records, for which no specific locality is given, other than the county are not plotted since in nearly all cases the relevant UTM square cannot be determined as most counties occupy two or more squares. The nomenclature for the Tipulidae follows Oosterbroek and Theowald (1992). Species were identified using Coe (1950) and an unpublished ms key prepared by Alan Stubbs.

List of collectors and abbreviations used for collectors' names

K. N. A. Alexander = KNAA; H. W. Andrews = HWA; Anonymous* = anon.; P. Ashe = PA; E. E. Austen = EEA; B. P. Beirne = BPB; C. W. Berg = CWB; R. E. Blackith = REB; R. M. Blackith = RMB; F. Bouskell = FB; P. S. Broomfield = PSB; E. F. Bullock = E. F. B; G. H. Carpenter = GHC; J. E. Chainey = JEC; P. J. Chandler = PJC; R. L. Coe = RLC; H. W. E. Croockewit = HWEC; M. Dierks = MD; H. St. J. Donisthorpe = HStJD; J. P. Duffels = JPD; F. W. Edwards = FWE; A. C. and W. N. Ellis = ACWNE; R. C. Faris = RCF; A. M. Feeney = AMF; J. Good = JG; P. H. Grimshaw = PHG; J. N. Halbert = JNH; A. H. Haliday = AHH; E. G. Hancock = EGH; A. G. Irwin = AGI; W. F. Johnson = WFJ; W. J. Kaye = WJK; J. J. F. X. King = JJFXK; C. Langham = CL; V. Larminia = VL; A. J. Lemon = AJL; J. McBean = JMcB; K. C. Mackay = KCM; J. N. Milne = JNM; C. B. Moffat = CBM; R. Nash = RN; J. P. O'Connor = JPOC; J. P. O'Connor and M. A. O'Connor = JMOC; B. O'Flynn = BOF; E. O'Mahony = EOM; P. Oosterbroek = PO; R. A. Phillips = RAP; E. C. Pelham-Clinton = ECP-C; B. R. Pitkin = BRP; R. F. Scharff = RFS; H. Seal = HS; K. C. Side = KCS; K. G. V. Smith = KGVS; M. C. D. Speight = MCDS; A. W. Stelfox = AWS; N. E. Stephens = NES; A. E. Stubbs = AES; J. Tardy = JT; R. I. Vane-Wright = RIVW; G. Verberne = GV; M. S. D. Westropp = MSDW; J. W. Yerbury = JWY.

* There are some pinned specimens in the National Museum of Ireland from the late 19th and early 20th centuries which have locality (and usually date) labels but lack any indication of the name of the collector - in all such anonymous cases the abbreviation anon. is used.

A question mark preceeding an abbreviated name, e.g. ?AHH, indicates some uncertainty about the identity of the collector.

Checklist of Irish Tipulidae

Subfamily Ctenophorinae

Ctenophora (*Cnemoncosis*) *ornata* Meigen, 1818

Ctenophora (*Ctenophora*) *pectinicornis* (Linnaeus, 1758)

Dictenidia bimaculata (Linnaeus, 1761)

Tanyptera (*Tanyptera*) *atrata atrata* (Linnaeus, 1758)

Subfamily Dolichopezinae

Dolichopeza (*Dolichopeza*) *albipes* (Ström, 1768)

Subfamily Tipulinae

Nephrotoma analis (Schummel, 1833)

Nephrotoma appendiculata (Pierre, 1919)

Nephrotoma cornicina (Linnaeus, 1758)

Nephrotoma crocata (Linnaeus, 1758)

Nephrotoma dorsalis (Fabricius, 1781)

Nephrotoma flavescens (Linnaeus, 1758)

Nephrotoma flavipalpis (Meigen, 1830)

Nephrotoma lunulicornis (Schummel, 1833)

Nephrotoma quadrifaria (Meigen, 1804)

Nephrotoma scurra (Meigen, 1818)

Nephrotoma submaculosa Edwards, 1928

Prionocera turcica (Fabricius, 1794)

Tipula (*Acutipula*) *fulvipennis* De Geer, 1776

Tipula (*Acutipula*) *luna* Westhoff, 1879

Tipula (*Acutipula*) *maxima* Poda, 1761

Tipula (*Acutipula*) *vittata* Meigen, 1804

Tipula (*Beringotipula*) *unca* Wiedemann, 1817

Tipula (*Dendrotipula*) *flavolineata* Meigen, 1804

Tipula (*Lunatipula*) *cava* Riedel, 1913

Tipula (*Lunatipula*) *fascipennis* Meigen, 1818

Tipula (*Lunatipula*) *lunata* Linnaeus, 1758

Tipula (*Lunatipula*) *peliostigma* Schummel, 1833

Tipula (*Odonatisca*) *nodicornis* Meigen, 1818

Tipula (*Platytipula*) *luteipennis* Meigen, 1830

Tipula (*Platytipula*) *melanoceros* Schummel, 1833
Tipula (*Pterelachisus*) *irrorata* Macquart, 1826
Tipula (*Pterelachisus*) *pseudovariipennis* Czizek, 1912
Tipula (*Pterelachisus*) *submarmorata* Schummel, 1833
Tipula (*Pterelachisus*) *varipennis* Meigen, 1818
Tipula (*Savtshenkia*) *alpium* Bergroth, 1888
Tipula (*Savtshenkia*) *confusa* van der Wulp, 1883
Tipula (*Savtshenkia*) *obsoleta* Meigen, 1818
Tipula (*Savtshenkia*) *pagana* Meigen, 1818
Tipula (*Savtshenkia*) *rufina* Meigen, 1818
Tipula (*Savtshenkia*) *signata* Staeger, 1840
Tipula (*Savtshenkia*) *staegeri* Nielsen, 1922
Tipula (*Savtshenkia*) *subnodicornis* Zetterstedt, 1838
Tipula (*Schummelia*) *variicornis* Schummel, 1833
Tipula (*Schummelia*) *yerburyi* Edwards, 1924
Tipula (*Tipula*) *oleracea* Linnaeus, 1758
Tipula (*Tipula*) *paludosa* Meigen, 1830
Tipula (*Tipula*) *subcunctans* Alexander, 1921
Tipula (*Vestiplex*) *hortorum* Linnaeus, 1758
Tipula (*Vestiplex*) *montana* Curtis, 1834
Tipula (*Vestiplex*) *nubeculosa* Meigen, 1804
Tipula (*Vestiplex*) *scripta* Meigen, 1830
Tipula (*Yamatotipula*) *couckei* Tonnoir, 1921
Tipula (*Yamatotipula*) *lateralis* Meigen, 1804
Tipula (*Yamatotipula*) *marginella* Theowald, 1980
Tipula (*Yamatotipula*) *montium* Egger, 1863
Tipula (*Yamatotipula*) *pierrei* Tonnoir, 1921
Tipula (*Yamatotipula*) *pruinosa* Wiedemann, 1817

SUBFAMILY CTENOPHORINAE

***Ctenophora* (*Cnemoncosis*) *ornata* Meigen, 1818**

There is only one Irish record of this species, details of which are given in Speight and Nash (1993). This is the most northerly record of the species in the British Isles as the most recently published cranefly atlas (Stubbs, 1992) indicates that in Britain the species is confined to southern England with a flight period from June to July. The County Fermanagh record extends the flight period to early May.

FERMANAGH: 3.v.1919, Tempo H3548 (NA.4), CL (Speight and Nash, 1993; Oosterbroek *et al*., 2006 "Ireland").

***Ctenophora* (*Ctenophora*) *pectinicornis* (Linnaeus, 1758)**

This large and spectacular species was only added to the Irish fauna in 1993 (Speight and Nash, 1993) from specimens collected in a small area of woodland in the Killarney National Park dominated by old birch (*Betula*), ash (*Fraxinus*) and oak (*Quercus*). A second Irish record (O'Connor and Ashe, 1998) from another Killarney locality was discovered when a specimen collected in June 1932 was found in an old box of miscellaneous insects that was donated to the National Museum of Ireland. Although suitable old woodland habitat no longer exists at Cahirnane (also spelt Cahernane), which is about 2.5km to the north of the Doo Lough locality, the fact that the two localities are widely spaced indicates that there may be other areas within the Killarney Valley where the species exists.

KERRY: vi.1932, Cahirnane, Killarney (MT.3), EFB (O'Connor and Ashe, 1998; Oosterbroek *et al*., 2006 "Ireland"); 27-29.v.1992, north shore of Doo Lough, Muckross Peninsula, Killarney National Park V9585 (MT.3), MCDS (Speight and Nash, 1993; Oosterbroek *et al*., 2006 "Ireland").

***Dictenidia bimaculata* (Linnaeus, 1761)**

In Ireland, this species has been bred from dead wood of alder (*Alnus*), birch (*Betula*) and oak (*Quercus*).

In Speight and Nash (1993) and Speight (2004), the records respectively for County Kerry

and for County Galway lack specific collecting dates.

CAVAN: *circa* 21.vi.1984, *circa* 29.vi.1985, Virginia, reared from a rotten alder (*Alnus*) log, collected in spring 1984 N586881 (PV.1), JPOC, (O'Connor and Speight, 1987); **GALWAY**: 1994, Connemara National Park, Malaise trap L7-5- (MV.2) (Speight, 2004); **KERRY**: 1992, north shore of Doo Lough, Muckross Peninsula, Killarney National Park V9585 (MT.3), MCDS (Speight and Nash, 1993); **KILDARE**: 11.viii.1952, Naas (PU.3), RLC; 26.vii.2006, Ardscull Mote, several on decaying beech trunks (PU.1), PJC; **LEITRIM**: 28.v.1986, Clooncoe Lake N1092 (NV.3), PA; 28.v.1986, Clooncoe Lake N1092 (NV.3), MCDS; **OFFALY**: 5.vii.1984, Clara Bog N2429 (NV.4), MCDS (O'Connor and Speight, 1987); 5.viii.1986, All Saint's Bog, from dead birch *Betula* stump N0010 (NU.3), MCDS (O'Connor and Speight, 1987); **WEXFORD**: 17.vi.1982, Mount Garrett Wood S720305 (PU.2), JMOC (O'Connor and Speight, 1987); **WICKLOW**: 10.vi.1928, Rathdrum T1888 (PU.3), AWS (O'Connor and Speight, 1987); v.1988, Blackditch Wood O3103 (PU.3), REB/RMB (Blackith *et al*., 1991); 13.vi.1993, Drumgoff Bridge, Glenmalur, reared from pupae under loose bark on oak *Quercus* logs in mature oakwood T1090 (PU.3), KNAA.

***Tanyptera* (*Tanyptera*) *atrata atrata* (Linnaeus, 1758)**

The Co. Wicklow record in Carpenter (1908) is apparently based on unpublished data from page 207 of Haliday's ms 'Catalogue of Irish Insects' (see Figure 3). This lists "*Ctenophora atrata* L." followed by a symbol (cross inside a circle), the abbreviation "ta" and the word "Powerscourt." in the right hand margin. The "ta" abbreviation was used by Haliday to indicate that the species was found by James Tardy (at Powerscourt) but there is no "ha" abbreviation (for Haliday) indicating that he ever took the species there.

Tardy did not use labels on his Irish specimens as it was not then customary, in the early 19th century, to label specimens with date collected, locality, collector or other data (see Good and Linnie, 1990). In the National Museum of Ireland (NMI) collection, there is a single pinned Irish male specimen which has a Haliday association and three labels. The first is a green label with "Ireland" (printed in black ink) which is an acceptance that the specimen is definitely of Irish origin. The second is a white label with the word Haliday (printed in black ink)

underneath which is written in ink "262.1901" which is a Museum accession number which indicates that the specimen was in item number 262 which was donated or acquired in 1901. This 262 number in the NMI refers to several boxes of miscellaneous insects loaned by Trinity College, Dublin (TCD) in 1901. This material had been part of the TCD collection that was revised and rearranged by Haliday. However, none of this material was collected by Haliday but it is accepted as originating from the Tardy collection (Good and Linnie, 1990). The first and second labels were placed on the pin of the specimen in 1901 by the NMI. The third is a more recent white label which concerns the identity of the specimen (by one of the co-authors of this paper) with the wording (written in black ink) "*Ct.* (*Tanyptera*) *atrata* f. *ruficornis*" underneath which (printed in black ink) is "det. R. I. Vane-Wright, 1971". The variety *ruficornis* (Meigen), which is keyed in Coe (1950), is not currently recognised and is now just a junior synonym of *T. atrata atrata.*

The specimen, by its condition, appears to be a very old one, with a moderate coating of black specks (possibly soot from coal fires) and dust on the surface. It has only one wing (with a small portion of the margin beyond the stigma missing), no antennae and only one leg. From the available data it is clear that this is a specimen collected by James Tardy in the early 19th century at Powerscourt. The date range, 1800-1832, from Good and Linnie (1990), is based on the period of time when James Tardy was known to be an active collector of insects in Ireland. However, it is likely that this specimen was collected well before 1832, probably in the 1810 to 1825 period, and is therefore one of the oldest known Irish Diptera specimens.

Stelfox's diary for the 4th June 1937 was consulted to determine where in Glendalough (Co. Wicklow) he collected the *atrata* specimen. The diary reveals that he was collecting in the woods and the lake shore area near Pollanass Waterfall (grid reference O1196).

In Speight and Nash (1993), although *atrata* is recorded from the Killarney Valley (County Kerry), no exact date, specific locality or grid reference is given. In Speight (2004), the record from Connemara National Park (County Galway) lacks a specific date but only a date range (1.v.- 7.ix.1994) for operating a Malaise trap is given.

In Stubbs (1992), there is a post 1960 record (black dot) for a locality in the northern part of

Ireland which appears to be in County Fermanagh (around Lower Lough Erne). As explained in the introduction to this paper the data used to compile the maps in Stubbs(1992) is not currently available or easily accessed.

GALWAY: 24.v.1974, Lough Inagh, Derryclare oakwoods L8349 (MV.2), MCDS (Speight, 1975, sub *Ctenophora* (*Tanyptera*) *atrata*); 1.v.- 7.ix.1994, Connemara National Park, Malaise trap L7-5- (MV.2) (Speight, 2004); **KERRY**: no date [*circa* 1990-1993], Killarney Valley (MT.3), MCDS (Speight and Nash, 1993); **OFFALY**: no date [*circa* 1900-1922], wood near Tullamore (NV.4), JNH (Halbert, 1922, as *Xiphura atrata*); **WICKLOW**: 1800-1832, Powerscourt (PU.3), JT (Carpenter, 1908, as *Xiphura atrata*); 9.vi.1919, Powerscourt Park (PU.3), JNH (Halbert, 1922, as *Xiphura atrata*); 11.vi.1925, 20.v.1926 (ex ash *Fraxinus* log), Powerscourt (PU.3), AWS; 29.v.1927, 16.v.1929, Powerscourt Deerpark (PU.3), AWS; 4.vi.1937, Glendalough (PU.3), AWS.

SUBFAMILY DOLICHOPEZINAE

***Dolichopeza* (*Dolichopeza*) *albipes* (Ström, 1768)**

In the National Museum of Ireland pinned collection, there are three Irish Haliday specimens (one male and two females). The species is listed in Walker (1856 sub *chirothecata* Scopoli) as Irish ("I." abbreviation) based on information supplied by Haliday.

There are four dots on the map of Ireland in Stubbs (1992) for which the original data is currently unavailable.

CORK: 19-20.vi.1970, Glengarriff State Forest V9157 (MT.4), RIVW; **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833 sub *sylvicola* Curtis); **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE; 12.vi.1970, Lough Gal Q476068 (MT.1), RIVW; 13.vi.1970, Brandon Point to Creek Point Q5117 (MT.1), RIVW; **LAOIS**: 6.vi.1970, The Cut, Slieve Bloom Mountains N295045 (NU.3), RIVW; **TIPPERARY**: 16.vii.1975, Burncourt R937192 (NT.3), AES; **WICKLOW**: 1831-1832, Vale of Clara and/or Glendalough (PU.3), AHH (Haliday, 1833, as *sylvicola* Curt.; Carpenter, 1908, as *sylvicola* Curt.); 26.vi.1970, Military Road Falls O112030 (PU.3), RIVW; 24.vi.1975, Derrybawn Woods T1-9- (PU.3), PJC; 25.vi.1975, Powerscourt Deer Park O1-1- (PU.3), PJC.

SUBFAMILY TIPULINAE

***Nephrotoma analis* (Schummel, 1833)**

First recorded as new to Ireland in Ashe *et al.* (1991), it is scarce species from shaded river banks, especially those with a sandy soil (Stubbs, 1992).

CORK: 16.vii.1975, Kildorrery R723106 (NT.1), AES (Ashe *et al.*, 1991); **LIMERICK**: 19.vii.1975, Limerick City R575597 (NU.2), AES (Ashe *et al.*, 1991); **WEXFORD**: 24.vii.1975, Strahart S958514 (PU.4), AES (Ashe *et al.*, 1991).

***Nephrotoma appendiculata* (Pierre, 1919)**

The only record of this species was first published in Ashe *et al.* (1991). A typical spring-time species of open grassland, the apparent extreme rarity in Ireland may be due to insufficient collecting early in the season (Stubbs, 1992).

DOWN: 8.viii.1965, Bangor J3-7- (UF.1), RN (Ashe *et al.*, 1991).

***Nephrotoma cornicina* (Linnaeus, 1758)**

In the National Museum of Ireland collections, there in one pinned male Haliday specimen. **CARLOW**: 25.vii.1964, 27.vii.1964, Carlow Town (PU.1), AMF (Feeney, 1968); **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833 sub *Tipula*); **WEXFORD**: 24.vii.1975, Strahart S958514 (PU.4), AES.

***Nephrotoma crocata* (Linnaeus, 1758)**

There is one Irish Haliday specimen, a male, in the National Museum of Ireland pinned collection.

A rare red data book species, the larvae of which are found in damp soil, which is declining in Britain but which seems to favour heathy woods and fen woodland (Falk, 1991).

DOWN: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833 sub *Tipula*); **KERRY**: vi.1932, Cahirnane, Killarney (MT.3), EFB; **LAOIS**: 8.v.1928, Maryborough [now Portlaoise] (PU.1), RAP (Oosterbroek, 1982); **WICKLOW**: 15.vi.1924, Powerscourt (PU.3), AWS (Oosterbroek, 1982); 10.vi.1931, Burgage Bridge, Blessington (PU.3), AWS (Oosterbroek, 1982); 19.vi.1983, near Enniskerry, sand quarry and deciduous wood O227160 (PU.3), JG.

***Nephrotoma dorsalis* (Fabricius, 1781)**

First published as an Irish species in Stubbs (1976). The five spots on the Irish map in the cranefly atlas (Stubbs, 1992) represent all the records detailed below except the Glengarriff one of the 6th July 1985. It is a notable red data book species associated with sandy river banks, usually beside woodland (Falk, 1991).

CORK: 22.vii.1924, Glengarriff, Bantry Demense (MT.4), JNH; 16.vii.1975, Ballymaquirk Bridge, Banteer W385987 (NT.1), AES (Stubbs, 1982); 16.vii.1975, Kildorrery R723106 (NT.1), AES; 16.vii.1975, Mallow W550980 (NT.1), AES; 6.vii.1985, Glengarriff, oak *Quercus* wood V907575 (MT.4), JMOC; **KERRY**: 18.vii.1975, Releagh Bridge, south of Kenmare V923603 (MT.4), AES.

***Nephrotoma flavescens* (Linnaeus, 1758)**

Grimshaw (1912), in the Clare Island Survey, recorded *Pachyrrhina lineata* Scop. from four localities but only the specimens from Clare Island and Mulranny (or Molrenny), for which there are reference specimens in the National Museum of Ireland, belong here. The Curraun District specimen is a misidentified *N. submaculosa* (see comments below). Because there are two different species included under the name *P. lineata* in Grimshaw (1912) it has not been possible to determine where to place the record from Westport Demesne because there are no specimens in the National Museum of Ireland.

In the National Museum of Ireland pinned collection, there are two Irish Haliday specimens.

The Glenbeigh (County Kerry) record detailed below was published in Anon (1903) but was evidently collected by a group consisting of three people (F. Bouskell, H. St. J. Donisthorpe and W. J. Kaye) as indicated in a paper by Bouskell (1903) which preceeds Anon (1903) in the same journal issue. Since the original specimen has not yet been located, all three persons in the group are considered to be the collectors.

The specimen of *flavescens* noted in Beirne (1949) from either Conty Kerry or County Wicklow should be in the collections of the Natural History Museum (London) but it was not found and therefore the county, collecting date and locality cannot be determined. If the specimen is re-discovered the data can be published in a future publication.

We are lacking the data for five of the six dots on the map of Ireland for this species in Stubbs (1992).

ANTRIM: 22.vi.1992, Ballykeel, Islandmagee J484962 (UF.1), KNAA; **CARLOW**: 23.vii.1964, Carlow Town (PU.1), AMF (Feeney, 1968); **CLARE**: 23.vii.1958, Kinvarra (NU.1), GV; 15.vii.1981, Burren M100005 (MU.3), JPOC; 16.vii.1981, Rathborney River, Burren M2105-M2004 (MU.3), JPOC; **DOWN**: 12-13.viii.1974, Light House Island, Copeland Islands J5985 (UF.1), AGI; 2.v.1987, Crawfordsburn Country Park (UF.1), PJC; **DUBLIN**: vi.1905, Lambay (PV.4), JNH; 1909, Howth (PV.4), JNH; vii.1907, Dundrum (PV.4), RFS (Carpenter, 1908 sub *Pachyrrhina histrio* Fabricius); 19.vii.1958, Howth (PV.4), GV; **GALWAY**: no date [vi.1895], Clonbrock (NV.2), JNH; 16.vii.1972, Lough Corrib (MV.4), MD; 3.vi.1994, Ballynahinch Woods L7647 (MV.2), KNAA; **KERRY**: vii.1854, Great Blasquet [= Blasket] (LT.3), ?AHH (Hogan and Haliday, 1855 sub *Pachyrrhina histrio* Fabricius); 3.vi.1902, Glenbeigh (MT.1), FB, HStJD and WJK (Anon., 1903 sub *Pachyrrhina histrio* Fab.); **KILDARE**: 10.vii.1969, Ardscull Mote (PU.1), PJC; **LAOIS**: 11.vii.1971, Emo Park N538052 (PU.1), PJC; **LEITRIM**: 31.vi.1963, Cloone (NV.3), AMF; vii.1963, Carrigallen (NV.3), AMF (Feeney, 1968); **MAYO**: vii.1910, Clare Island (MV.1), PHG (Grimshaw, 1912 sub *Pachyrrhina lineata* Scopoli);; vii.1910, Mulranny or Molrenny [= Mallaranny] (MV.1), PHG (Grimshaw, 1912 sub *Pachyrrhina lineata* Scopoli); **OFFALY**: 29.vi.1891, Edenderry (PV.2), anon.; **WATERFORD**: 22.vi.1970, Cappoquin X092994 (NT.3), RIVW; **WEXFORD**: v.1903, New Ross (PU.2), anon. (Carpenter, 1904 sub *histrio* Fabricius); 9.vi.1982, Duncannon, cultivated garden S739082 (PT.1), JPOC; **WICKLOW**: 12.vii.1983, near Calary Lower O234119 (PU.3), JPOC.

***Nephrotoma flavipalpis* (Meigen, 1830)**

The "Antrim" specimen of J. J. F. X. King refers to County Antrim and no other locality information is given on the labelled specimen, which is preserved in the pinned collections of the Natural History Museum, London. However, in Ashe *et al.* (2005a: 324), in a note under the species *Euphylidorea lineola* (Meigen), it was shown that material collected by King on the 12th August 1912 with an "Antrim" label is from the general vicinity of Shanes Castle, near

Randalstown, County Antrim.

We do not yet have the data for six or seven of the dots indicated on the map of Ireland for this species in Stubbs (1992).

ANTRIM: 12.viii.1912, "Antrim" [= Shanes Castle, near Randalstown] (PA.3), JJFXK; **CARLOW**: [?vi].1964, 25.vii.1964, 23.vii.1965, 31.vii.1966, Carlow Town (PU.1), AMF (Feeney, 1968); **CLARE**: 18.viii.1969, Glencolumbkille, Ballyvaughan (MU.3), ECP-C; 19.vii.1975, Kilkishen R493717 (NU.2), AES; **CORK**: 18.vii.1935, Lodge Woods, Glengarriff (MT.4), AWS; **DOWN**: 25.viii.1965, Bangor J3-7- (UF.1), AGI or RN; 18.viii.1974, Ballygowan J4163 (UF.2), AGI; **DUBLIN**: 18.vii.1958, Ballinas Corney [= Ballinascorney], (PV.4), GV; **KERRY**: 19.vii.1975, Headley Bridge, Abbeyfeale R074194 (MT.3), AES; **KILKENNY**: 15.vii.1975, Three Bridges, Knockroe, Piltown S423226 (PU.2), AES; **LIMERICK**: 19.vii.1975, Limerick City R575597 (NU.2), AES; **MAYO**: vii.1910, Mulranny or Molrenny [= Mallaranny] (MV.1), PHG (Grimshaw, 1912 sub *Pachyrrhina scalaris* Meigen); no date [1909-1911], Westport (MV.3), PHG (Grimshaw, 1912 sub *Pachyrrhina scalaris* Meigen); **TIPPERARY**: 4.vii.1981, Ballina, in vegetation beside River Shannon R708727 (NU.1), JPOC; **WATERFORD**: vii.1936, Dunmore East (PT.1), KCM; 5.vii.1990, Belle Lake S6605 (PT.1), JPOC; **WICKLOW**: 27.viii.1981 and 22.viii.1988, Glen of the Downs O2611 (PU.3), JPOC; 15.viii.1982, near Kilmacanogue, alder *Alnus* marsh O2514 (PU.3), JMOC; v.1988, Killoughter Marsh Field T3199 (PU.3), REM/RMB (Blackith *et al.*, 1991).

***Nephrotoma lunulicornis* (Schummel, 1833)**

A notable red data book species (Falk, 1991) associated with the middle reaches of wooded sandy river margins.

CARLOW: 22.vii.1964, Carlow Town (PU.1), AMF (Feeney, 1968).

***Nephrotoma quadrifaria* (Meigen, 1804)**

There is one Irish Haliday specimen in the National Museum of Ireland collection but the locality where it was collected cannot be determined.

In the Natural History Museum, London, there ia a pinned J. J. F. X. King specimen of

quadrifaria from County Wexford dated the 2nd July 1902 but without any specific locality data. It is not yet possible to determine the specific locality where it was collected or to give the relevant UTMsquare.

In Oosterbroek (1982), there is a record which is given as "Westport, Co. Clare" but Westport is in County Mayo.

We lack data for one of the County Down dots marked on the map for this species in Stubbs (1992).

ANTRIM: 11.vi.1992, Breesha Wood, Murlough Bay D193418 (PB.4), KNAA; **CARLOW**: 30.vii.1964, Carlow Town (PU.1), AMF (Feeney, 1968); 24.vii.1975, Graiguealug S766715 (PU.1), AES; **CLARE**: 8.vii.1981, Lisdoonvarna R134979 (MU.3), near Spa, JPOC; **CORK**: 19-20.vi.1970, Glengarriff State Forest V9157 (MT.4), RIVW; 3.vii.1985, Bantry V9848 (MT.4), JPOC; **DOWN**: 10.vi.1971 or 1969, Stormont J3-7- (UF.1), AGI or RN; **DUBLIN**: 17.vii.1971, Howth (PV.4), PJC; **FERMANAGH**: 28.v.1992, Reilly Wood, Crom Castle Estate H340255 (NA.4), KNAA; 3.vi.1992, Florence Court H1734 (NA.4), KNAA; **KILDARE**: 10.vii.1969, Ardscull Mote (PU.1), PJC; **KILKENNY**: 4.vii.1990, Harristown S5127 (PU.2), JPOC; **LAOIS**: 24.vii.1975, west of Abbeyleix S516840 (PU.1), AES; **MAYO**: no date [1909-1911], Westport Demesne (MV.3), JNH (Grimshaw, 1912; Oosterbroek, 1982); **TIPPERARY**: 16.vii.1975, Burncourt R937192 (NT.3), AES; 4.vii.1981, Ballina, in vegetation beside River Shannon R708727 (NU.1), JPOC; 27.v.1984, near Ballina, small wood R710725 (NU.1), JPOC; **WATERFORD**: 27.vi.1969, Dungarvan (NT.3), PJC; 22.vi.1970, Cappoquin X092994 (NT.3), RIVW; 15.vii.1975, Carrickbeg S404216 (PT.1), AES; **WEXFORD**: 14.vii.1975, Orristown T0413 (PT.3), AES; 15.vii.1975, near Newbawn S856244 (PU.4), AES; 13.vi.1982, Duncannon, mixed wood S7408 (PT.1), JMOC; 14.vi.1982, Ballyhighland S882407 (PU.4), JMOC; 12.vii.1991, Ballylane, New Ross S7324 (PU.2), JPOC; **WICKLOW**: 24.vi.1975, Whaley Abbey T1-8- (PU.3), PJC; 25.vi.1975, Powerscourt Deer Park O1-1- (PU.3), PJC; 26.vi.1975, Bellevue Woods, Glen of the Downs O2-1- (PU.3), PJC; vi.1988, Blackditch Wood O3103 (PU.3), REM/RMB (Blackith *et al.*, 1991); vi.1988, Killoughter Marsh Field T3199 (PU.3), REM/RMB (Blackith *et al.*, 1991); 28.v.1989, Knocksink O2117 (PU.3), JPOC.

***Nephrotoma scurra* (Meigen, 1818)**

There is one female Irish Haliday specimen in the National Museum of Ireland collection but the locality where it was collected cannot be determined.

Two of Feeney's specimens (22.vii.1965 and 4.viii.1965) have no locality labels but it is assumed that they were collected in Carlow Town as this appears to be the only locality where Feeney found this species.

We currently lack the data for one post 1960 record for County Down indicated on the map for this species in the cranefly atlas (Stubbs, 1992).

CARLOW: 31.vii.1964, 22.vii.1965, 4.viii.1965, 31.viii.1965, 2.viii.1968, Carlow Town (PU.1), AMF (Feeney, 1968).

***Nephrotoma submaculosa* Edwards, 1928**

The County Wexford specimens of *submaculosa* collected by J. J. F. X. King on the 26th and 27th June 1902 are in the pinned collection in the Natural History Museum, London. Although specific County Wexford localities are not given data, from the Trichoptera (see Ashe *et al*. 2005a: 315-316) indicate that King was collecting in the vicinity of Johnstown Castle and Rosslare on these dates.

Grimshaw (1912), in the Clare Island Survey, recorded "*Pachyrrhina lineata* Scop." from four localities. Only the specimen from Curraun (or Corraun) District, which is in the National Museum of Ireland, belongs here which was re-identified as *submaculosa* by P. Oosterbroek in 1980 (see comments above under *N. flavescens*). Because there are two different species included under the name *P. lineata* in Grimshaw (1912) it has not been possible to determine where to place the record from Westport Demesne because there are no specimens from this locality in the National Museum of Ireland.

One of Feeney's specimens, collected on the 15.vii.1971, has no locality label but it is assumed that it was collected in Carlow Town as this appears to be the only locality where Feeney found this species.

We are lacking the data for three of the four dots on the map of Ireland for this species in Stubbs (1992).

CARLOW: vii.1964, 4.viii.1964, 8.viii.1968, 15.vii.1971, Carlow Town (PU.1), AMF (Feeney, 1968); 15.vii.1971, Carlow Town (PU.1), AMF; **CLARE**: 1.vi.1984, 26.v.1992, Fanore M1308 (MU.3), JPOC; **DONEGAL**: vii.1971, Aran Island, marshy coastal field B608106 [error = B680106] (NA.1), CWB (Berg, 1975); **MAYO**: vi.1909, Curraun (or Corraun) District (MV.1), RFS (Grimshaw, 1912 sub *Pachyrrhina lineata* Scop.; Oosterbroek, 1982); **WEXFORD**: 26.vi.1902, 27.vi.1902, "Wexford" [= Johnstown Castle and Rosslare] (PT.3), JJFXK; 23.vi.1951, Ballyteige (PT.3), BPB; Ballyteige, sand-dunes S9605 (PT.3), JPOC; 5.vi.1986, Ballyteige, sand-dunes S954046 (PT.3), JMOC; 2.vii.1991, Ballyteige S9504 (PT.3), JPOC; 4.vi.1986, The Raven, conifers on sand-dunes T110260 (PU.4), JPOC; 10.vi.1990, 16.vi.1990, Fethard S7905 (PT.1), JPOC; **WICKLOW**: 1.vi.1970, near Six Mile Point, dykes and reeds O315050 (PU.3), RIVW.

***Prionocera turcica* (Fabricius, 1794)**

A widespread species in the British Isles with semi-aquatic larvae which are associated with lowland bogs, margins of eutrophic ponds, quaking mires and more rarely fens (Stubbs, 1992).

We currently lack the data for two post 1960 records (one for County Galway and one for the south-western tip of County Cork) indicated on the map for this species in the cranefly atlas (Stubbs, 1992).

ANTRIM: 21.viii.1974, Masserene J1485 (PA.3), AGI; **CLARE**: 7.vi.1970, Lough Atorick R635960 (NU.1), RIVW; **CORK**: 29.v.1974, Dereenacarrin V8-5- (MT.4), KCS; **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE; 8.ix.1981, Kenmare Estate, Killarney V945905 (MT.3), JPOC; **KILDARE**: 9.vi.1984, Mouds Bog, Newbridge N7715 (PU.1), JMOC; **LAOIS**: 11.vii.1971, Emo Park N538052 (PU.1), PJC; **MAYO**: 5.viii.1911, Belclare (MV.3), PHG (Grimshaw, 1912); **OFFALY**: 5.vi.1970, Ballaghassan N537218 (PV.2), RIVW; **TYRONE**: 22.v.1975, Washing Bay, Lough Neagh H9066 (PA.4), AGI; **WATERFORD**: 5.viii.1902, Cappoquin (NT.3), JJFXK; 19.vii.1987, Ballin Lough, Kill S4403 (PT.1), JPOC; **WESTMEATH**: 28.vi.1987, Glen Lough (NV.4), PJC; **WEXFORD**: 6.vi.1986, Nethertown, willow *Salix* marsh T1205 (PT.3), JMOC.

***Tipula* (*Acutipula*) *fulvipennis* De Geer, 1776**

A widespread species of moist or wet woodland and the margins of small shaded streams (Stubbs, 1992).

We are currently lacking the data for nine of the dots on the map of Ireland for this species in Stubbs (1992).

ANTRIM: 21.viii.1974, Masserene J1485 (PA.3), AGI; **ARMAGH**: 31.viii.1974, Ardmore Point, Lough Neagh J0063 (PA.4), AGI; **CAVAN**: 12.ix.1991, Woodlawn, Lough Sheelin N4686 (PV.1), JPOC; **CARLOW**: vii.1964, 10.viii.1964, Carlow Town (PU.1), AMF (Feeney, 1968); **CLARE**: 21.vii.1975, Lisdoonvarna R137980 (MU.3), AES; **CORK**: 5.ix.1968, shore of Lough Hyne, near Skibbereen (MT.4), PSB and HS; 14.ix.1968, Healy Pass, near Adrigole, roadside vegetation (MT.2), PSB and HS; vii.1973, Five Mile Bridge [= Fivemilebridge] (NT.2), MD; 10-11.ix.1979, Ballydehob (MT.4), JPD; **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833 sub "?*lutescens*"); 18.viii.1974, Ballygowan J4163 (UF.2), AGI; **DUBLIN**: 18.vii.1958, Ballinas Corney [= Ballinascorney], (PV.4), GV; 7.vii.1981, Slade of Saggart O033245 (PV.4), JPOC; **GALWAY**: 24.vii.1958, between Moycullen and Spiddle (MV.4), GV; 25-27.ix.1974, Maam Cross, 12km [error = 12miles] west of Cong (MV.4), MD; 24.vii.1982, Rosteague House L6857 (MV.2), JMOC; **KERRY**: 16.vii.1975, Knockacapput, Rathmore W136907 (MT.3), AES; 16.vii.1975, 1mile east of Barraduff W102911 (MT.3), AES; 16.vii.1975, Loo W078810 (MT.3), AES; 18.vii.1975, Releagh Bridge, south of Kenmare V923603 (MT.4), AES; 19.vii.1975, Barry's Glen, north of Killarney V954976 (MT.3), AES; 8.ix.1981, Kenmare Estate, Killarney V945905 (MT.3), JPOC; 8.ix.1982, Ardfert Q7821 (MT.1), EGH (Hancock, 1990); **KILKENNY**: 15.vii.1975, Davidstown S646186 (PT.1), AES; **LAOIS**: 24.vii.1975, west of Abbeyleix S516840 (PU.1), AES; 20.ix.1982, The Derries, mixed wood N586050 (PU.1), JPOC; **LEITRIM**: vii.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 10.vii.1963, Drumshambo North (NV.3), AMF; **MAYO**: no date [1909-1911] Brackloon Wood (MV.3), PHG (Grimshaw 1912); vii.1910, Mulranny or Molrenny [= Mallaranny] (MV.1), PHG (Grimshaw, 1912); **OFFALY**: 23.vii.1975, Mill Park, Roscrea S116910 (NU.3), AES; **TIPPERARY**: 15.vii.1975, north-west of Caher S030275 (NU.4), AES; 16.vii.1975, Burncourt

R937192 (NT.3), AES; **WATERFORD**: 15.vii.1975, 4miles east of Tikineor S304225 (NU.4), AES; 19.vii.1987, Knockaderry Reservoir S4905 (PT.1), JPOC; **WESTMEATH**: 23.vii.1989, Pakenham N4470 (PV.2), JPOC; 28.viii.1990, Belvidere House N4247 (PV.2), JMOC; **WEXFORD**: 14.vii.1975, Orristown T0413 (PT.3), AES; 15.vii.1975, near Newbawn S856244 (PU.4), AES; 5.ix.1980, Stoneyford T1009 (PT.3), JPOC; **WICKLOW**: 14.ix.1907, Powerscourt (PU.3), JNH; 15.ix.1968, Rathdrum Forest (PU.3), PJC; 24.vi.1975, Glendalough T1-9- (PU.3), PJC; 24.vi.1975, Derrybawn Woods T1-9- (PU.3), PJC; 14.ix.1984, Coolatin Wood T018692 (PU.4), JPOC; vi-ix.1988, Blackditch Wood O3103 (PU.3), REM/RMB (Blackith *et al*., 1991); 27.viii.1981, 22.viii.1988, Glen of the Downs O2611 (PU.3), JPOC; 16.viii.1981, Russellstown Park N964109 (PU.3), JMOC; 15.viii.1982, Kilmacanoge Marsh, alder *Alnus* marsh/stream O2514 (PU.3), JMOC.

***Tipula* (*Acutipula*) *luna* Westhoff, 1879**

There are four dots marked on the map of Ireland for this species in Stubbs (1992) for which the data is not currently available.

ANTRIM: 26.v.1971, Barnett's Park, Belfast J3-7- (UF.2), RN; 16.v.1975, Barnett's Park, Belfast J3268 (UF.2), AGI; 19.v.1975, Masserene J1485 (PA.3), AGI; 24.v.1975, Glarryford Bog, near Clogh Mills D0515 (PA.3), AGI; **CAVAN**: 4.vi.1990, Virginia Woods N5987 (PV.1), JMOC; **CLARE**: 7.vi.1970, Lough Atorick R635960 (NU.1), RIVW; 7-8.vi.1970, Burren, near Caher River M1704 (MU.3), RIVW; 9.vi.1970, Muckanagh Lough R370922 (NU.1), RIVW; 25.v.1992, Lisdoonvarna Spa R1397 (MU.3), JMOC; **DERRY**: 22.v.1975, Traad Point, Lough Neagh H9587 (PA.3), AGI; **DOWN**: 18.v.1975, Ballygowan Wood J4163 (UF.2), AGI; **DUBLIN**: 4.v.1938, Saggart (PV.4), AWS (Feeney, 1968; Stelfox, 1968; Stelfox, 1970); **FERMANAGH**: 28.v.1992, Reilly Wood, Crom Castle Estate H340255 (NA.4), KNAA; **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE (Coe, 1950: 14, "S.W. Ireland"); 12.vi.1970, Lough Gal Q476068 (MT.1), RIVW; **KILDARE**: 5.vi.1970, Clogheen N620153 (PU.1), RIVW; **LAOIS**: 6.vi.1970, The Cut, Slieve Bloom Mountains N295045 (NU.3), RIVW; **LEITRIM**: vi.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 6.v.1963, Cloone (NV.3), AMF; 5.v.1963, Drumshambo North (NV.3), AMF; **LIMERICK**: 10.vi.1970, Gallows Hill, near

Limerick R514636 (NU.2), RIVW; **MEATH**: 7.vi.1971, Slane (PV.3), MCDS; **OFFALY**: 5.vi.1970, Ballaghassan N537218 (PV.2), RIVW; 5.vi.1970, near Bracknagh N612173 (PU.1), RIVW; **SLIGO**: 13.viii.1986, Beltra Loughs, at *Crataegus* (hawthorn) flowers (NA.2), PJC; **TYRONE**: 22.5.1975, Ardboe, Lough Neagh H9675 (PA.3), AGI; **WESTMEATH**: 31.v.1983, Lough Ennell N390468 (PV.2), JPOC; **WEXFORD**: 2.vi.1986, Ferrycarrig T005228 (PT.3), JPOC; 3.vi.1986, Ferrycarrig T005228 (PT.3), JMOC; 7.vi.1986, Oaklands S715255 (PU.2), JMOC; 9.vi.1986, Nethertown T125050 (PT.3), JMOC; 27.v.1987, Killoughrim S8941 (PU.4), JPOC; 28.v.1987, Curracloe T1127 (PU.4), JPOC; **WICKLOW**: 9.vii.1969, below Trinity Church, Glendalough (PU.3), PJC; vi.1988, Blackditch Wood O3103 (PU.3), REB/RMB (Blackith *et al*., 1991); iv-vi.1988, Killoughter Marsh Field T3199 (PU.3), REB/RMB (Blackith *et al*., 1991); iv.1988, Clonmannon Wood T3098 (PU.3), REB/RMB (Blackith *et al*., 1991); iv.1989, Killoughter Fen, bred from *Phragmites* stem bases T3199 (PU.3), REB/RMB (Blackith *et al*., 1991).

***Tipula* (*Acutipula*) *maxima* Poda, 1761**

We are currently lacking the data for six of the dots on the map of Ireland for this species in Stubbs (1992).

ARMAGH: 1889, Armagh (PA.4), ?WFJ; **CLARE**: 7-8.vi.1970, Burren, near Caher River M1704 (MU.3), RIVW; 8.vi.1970, Spectacle Bridge, Lisdoonvarna R125975 (MU.3), RIVW; 9.vii.1981, Falls Hotel, Ennistimon R1288 (MU.3), JPOC; **CORK**: 3.vi.1895, Castletown Berehaven (MT.2), GHC; 12.vi.1901, Glengariff (MT.4), JWY (Yerbury, 1902, sub *gigantea*); 18.vi.1970, Curragh, near Trafrask V8651 (MT.4), RIVW; 19-20.vi.1970, Glengarriff State Forest V9157 (MT.4), RIVW; 1.vii.1985, Garnish Island, Glengarriff V9356 (MT.4), JMOC; **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833 sub *gigantea*); **DONEGAL**: vii.1971, Poison Glen B903108 [error = B930108] (NA.3), CWB (Berg, 1975); **DUBLIN**: vi.1905, Lambay (PV.4), JNH; vii.1925, Clonskeagh (PV.4), MSDW; 19.vi.1938, Glenasmole (PV.4), EOM; **GALWAY**: 14.vii.1892, Leenane (MV.4), EEA (Yerbury, 1902, sub *gigantea*); 24.vii.1958, between Moycullen and Spiddle (MV.4), GV; 26.vii.1958, Roundstone (MV.2), GV; 15.vii.1975, near Roundstone (MV.2), HWEC; 16.vii.1975, Letterdife, near Roundstone

(MV.2), HWEC; 24.vii.1982, Rosteague House L6857 (MV.2), JMOC; **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE; 14.vi.1970, Lough Guitane W035848 (MT.3), RIVW; 16.vi.1970, Boughill Rock V850755 (MT.3), RIVW; 12.vii.1973, Dingle (MT.1), MD; vii.1973, Sneem (MT.2), MD; 18.vii.1975, The Sound, Kenmare V930708 (MT.4), AES; 18.vii.1975, River Sheen V955675 (MT.4), AES; 18.vii.1975, Releagh Bridge, south of Kenmare V923603 (MT.4), AES; **KILDARE**: 4.vi.1970, Lullybeg N710240 (PV.2), RIVW; **LEITRIM**: 24.v.1963, Edenbawn [= Edenbaun] (NV.3), AMF; 20.v.1964, Carrigallen (NV.3), AMF (Feeney, 1968); **LIMERICK**: 10.vi.1970, Gallows Hill, near Limerick R514636 (NU,2), RIVW; **MAYO**: 5.viii.1911, Belclare (MV.3), PHG (Grimshaw, 1912); no date [1909-1911], Belclare (MV.3), JNH (Grimshaw, 1912); no date [1909-1911], near Westport (MV.3), PHG (Grimshaw, 1912); vii.1910, Mulranny or Molrenny [= Mallaranny] (MV.1), PHG (Grimshaw, 1912); **WATERFORD**: 15.vii.1975, 4 miles east of Tikineor S304225 (NU.4), AES; **WEXFORD**: 8.vi.1895, 24.v.1898, 2.v.1917, Ballyhyland [= Ballyhighland] (PU.4), CBM (Moffat, 1922, 1931, 1941); no date [1895-1921], Tubbergall [= Tobergal] (PU.4), CBM (Moffat, 1922, 1931, 1941); 14.vii.1975, Orristown T0413 (PT.3), AES; 13.vi.1986, Stoneyford T1009 (PT.3), JPOC; 28.v.1987, near Glenbough, kettlehole T0929 (PU.4), JPOC; **WICKLOW**: v.1907, Blessington (PU.3), JNH (Carpenter, 1908 sub *gigantea* Schrank); 18.vii.1891, Altidore (PU.3), RFS (Carpenter, 1908 sub *gigantea* Schrank).

***Tipula* (*Acutipula*) *vittata* Meigen, 1804**

None of the data for the seven dots marked on the map of Ireland for this species in Stubbs (1992) is currently available.

CLARE: 21.iv.1982, Lisdoonvarna Spa R134979 (MU.3), JMOC; **DUBLIN**: 24.iv.1938, 8.v.1938, Glenasmole (PV.4), AWS (Feeney, 1968); **LEITRIM**: iv.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 26.iv.1963, Drumshambo North (NV.3), AMF; **WICKLOW**: 8.v.1988, Killakee, ovipositing by stream in beechwood (PV.4), PJC.

***Tipula* (*Beringotipula*) *unca* Wiedemann, 1817**

There are six Irish Haliday specimen in the National Museum of Ireland collection, four with *longicornis* and two with *hortensis* determination labels - both these species are junior

synonyms of *unca*. Locality data for these specimens is lacking.

There is one dot for County Down plotted on the map for this species in Stubbs (1992) for which we do not have the relevant data.

ANTRIM: 30.vi.1975, Masserene, Lough Neagh J1-8- (PA.3), PJC; **CARLOW**: vi.1964, Carlow Town (PU.1), AMF (Feeney, 1968); **CAVAN**: 28.vi.1975, near Lough Ramor N5-8- (PV.1), PJC; **CLARE**: 7-8.vi.1970, Burren, near Caher River M1704 (MU.3), RIVW; **CORK**: 19-20.vi.1970, Glengarriff State Forest V9157 (MT.4), RIVW; 16.vii.1975, Ballymaquirk Bridge, Banteer W385987 (NT.1), AES; 16.vii.1975, Kildorrery R723106 (NT.1), AES; **KERRY**: ix.1898, Caher Peak, Macgillicuddy Reeks, 2,500feet (MT.1), RFS and GHC (Scharff and Carpenter, 1899, sub *hortensis*); 16.vii.1975, Knockacapput, Rathmore W136907 (MT.3), AES; 16.vii.1975, 1mile east of Barraduff W102911 (MT.3), AES; 17.vii.1975, Reen V870705 (MT.4), AES; 19.vii.1975, Barry's Glen, north of Killarney V954976 (MT.3), AES; **KILKENNY**: 15.vii.1975, Davidstown S646186 (PT.1), AES; **LEITRIM**: vi.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 12.vi.1963, Adoon (NV.3), AMF; 13.vi.1963, Drumshambo North (NV.3), AMF; **LIMERICK**: 7.vii.1981, Lough Gur R627414 (NU.2), JPOC; **LOUTH**: 29.vi.1975, Ballymascanlon Swamp J0-1- (PV.3), PJC; 29.vi.1975, Killin Park J0-0- (PV.3), PJC; **MAYO**: no date [1909-1911], Westport (MV.3), anon. (Grimshaw, 1912 sub *longicornis* Schummel); **OFFALY**: 5.vi.1970, near Bracknagh N612173 (PU.1), RIVW; **TIPPERARY**: 22.vi.1975, Woodroff S1-2- (NU.4), PJC; 22.vi.1975, Marl Bog 'Wildlife Sanctuary', near Dundrum R9-4- (NU.4), PJC; 15.vii.1975, north-west of Caher S030275 (NU.4), AES; 16.vii.1975, Burncourt R937192 (NT.3), AES; **WATERFORD**: 15.vii.1975, Carrickbeg S404216 (PT.1), AES; 5.vii.1988, 19.vi.1991, Ballin Lough, S4403 (PT.1), JPOC; 4.vii.1989, Ballin Lough, Kill S4403 (PT.1), JMOC; **WEXFORD**: 14.vii.1975, Orristown T0413 (PT.3), AES; 15.vii.1975, near Newbawn S856244 (PU.4), AES; 12.vi.1990, Oaklands S7125 (PU.2), JPOC; 18.vi.1982, Oaklands, mixed wood S718259 (PU.2), JMOC; **WICKLOW**: ix.1891, Callary [= Calary] (PU.3), anon.; no date [*circa* 1895-1902], Newcastle (PU.3), JNH; v-vii.1940, Bray (PU.3), BPB (Beirne, 1949; Coe, 1950: 21, "S.E. Ireland"); 7.vii.1969, Glencree (PU.3), PJC; 9.vii.1969, below Trinity Church, Glendalough (PU.3), PJC; 24.vi.1975, Whaley

Abbey T1-8- (PU.3), PJC; vi.1988, Blackditch Wood O3103 (PU.3), REB/RMB (Blackith *et al*., 1991); x.1988, Killoughter Marsh Field T3199 (PU.3), REB/RMB (Blackith *et al*., 1991).

***Tipula* (*Dendrotipula*) *flavolineata* Meigen, 1804**

Although Haliday (1833) includes a record of *flavolineata* from Holywood, County Down, it was apparently misidentified because in Haliday's unpublished ms 'Catalogue of Irish insects', on page 207 (Fig. 3), the species "*flavo-lineata* ??" is crossed out and replaced by "*melanoceros* Schu" in the right hand margin. This indicates that Haliday's original identification of *flavolineata* and its inclusion in Haliday (1833), was erroneous and that the correct name to apply was *melanoceros*. See note below on *melanoceros*.

There is one dot, in the border area between Counties Louth and Down, plotted on the map for Ireland for this species in Stubbs (1992) for which the data cannot be accessed at present. **KERRY**: 26.v.1994, Tomies Wood, Killarney, exuvia from decaying oak wood V9188 (MT.3), KNAA; 6.vi. 1994, Galway's Bridge, Killarney, exuvia from decaying oak wood V914803 (MT.3), KNAA; **LAOIS**: 11.vi.1983, The Derries N583051 (PU.1), JMOC; **SLIGO**: 14.vi.1999, Union Wood, reared from pupa beneath loose bark on decaying oak branch G680285 (NA.2), KNAA; **WEXFORD**: 14.vi.1982, Ballyhighland Wood S8840 (PU.4), JMOC; 11.vi.1990, Ferrycarrig T0023 (PT.3), JPOC; **WICKLOW**: 8.vii.1969, 24.v.1970, Lugduff River, Glendalough (PU.3), PJC; 24.vi.1975, Derrybawn Woods T1-9- (PU.3), PJC; 8.v.1987, 9.v.1987, 24.v.1987, Powerscourt, reared from a rotting oak *Quercus* log collected on 3.v.1987 O2012 (PU.3), JPOC.

***Tipula* (*Lunatipula*) *cava* Riedel, 1913**

First recorded from Ireland in Ashe *et al*. (1991) based on the first two of the following records.

CORK: 17-18.vi.1970, coast between Shot Head and Trafrask V8548 (MT.4), RIVW (Ashe *et al*., 1991); 18.vi.1970, Curragh, near Trafrask V8651 (MT.4), RIVW (Ashe et al., 1991); 1-15.vii.1977, Sherkin Island (MT.4), ACWNE; DUBLIN: 19.vii.1958, Howth (PV.4), GV.

***Tipula* (*Lunatipula*) *fascipennis* Meigen, 1818**

There are two dots plotted on the Irish map for this species in Stubbs (1992) but at present

the original data used to compile this atlas is not accessible.

CARLOW: vi.1964, Carlow Town (PU.1), AMF (Feeney, 1968); 19.vi.1982, Cloughristick S7069 (PU.2), JMOC; 17.vi.1991, St Mullins S7238 (PU.2), JPOC; **CLARE**: 19.vii.1975, Kilkishen R493717 (NU.2), AES; **CORK**: 19-20.vi.1970, Glengarriff State Forest V9157 (MT.4), RIVW; 16.vii.1975, Ballymaquirk Bridge, Banteer W385987 (NT.1), AES; 16.vii.1975, Ahane W224942 (MT.3), AES; 16.vii.1975, Kildorrery R723106 (NT.1), AES; 1-15.vii.1977, Sherkin Island (MT.4), ACWNE; 3.vii.1985, Bantry House V9848 (MT.4), JPOC; **DUBLIN**: 18.vii.1958, Ballinas Corney [= Ballinascorney], (PV.4), GV; 20.vii.1958, Dublin (PV.4), GV; 7.viii.1981, Slade of Saggart O033245 (PV.4), JPOC; **KERRY**: 28.vi.1969, by River Gueestin, Caherdean (MT.3), PJC; 28.vi.1969, Milltown (MT.1), PJC; 2.vii.1969, Killarney (MT.3), PJC; 16.vi.1970, near Dinnis Island, Killarney V945848 (MT.3), RIVW; 11.vii.1973, Muckross [near Killarney, not Co. Donegal] (MT.3), MD; vii.1973, Sneem (MT.2), MD; 16.vii.1975, Knockacapput, Rathmore W136907 (MT.3), AES; 16.vii.1975, 1mile east of Barraduff W102911 (MT.3), AES; 16.vii.1975, Loo W078810 (MT.3), AES; 17.vii.1975, Reen V870705 (MT.4), AES; 17.vii.1975, Derreendarragh V795723 (MT.2), AES; 17.vii.1975, south of Killarney V932826 (MT.3), AES; 17.vii.1975, Cloonee Loughs, south-west of Kenmare V8264 (MT.4), AES; 18.vii.1975, River Sheen V955675 (MT.4), AES; 18.vii.1975, Releagh Bridge, south of Kenmare V923603 (MT.4), AES; 19.vii.1975, Headley Bridge, Abbeyfeale R074194 (MT.3), AES; **KILDARE**: 21.vii.1958, Moyvalley (PV.2), GV; 11.vii.1982, Newbridge Fen N7616 (PU.1), JMOC; **KILKENNY**: 23.vi.1975, Jenkinstown Wood S4-6- (PU.2), PJC; 15.vii.1975, Davidstown S646186 (PT.1), AES; **LAOIS**: 11.vii.1971, Emo Park N538052 (PU.1), PJC; 24.vii.1975, west of Abbeyleix S516840 (PU.1), AES; **LEITRIM**: vi.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 12.vi.1963, 20.vi.1963, Drumshambo North (NV.3), AMF; **OFFALY**: 23.vii.1975, Mill Park, Roscrea S116910 (NU.3), AES; **TIPPERARY**: 22.vi.1975, Woodroff S1-2- (NU.4), PJC; 15.vii.1975, north-west of Caher S030275 (NU.4), AES; 16.vii.1975, Burncourt R937192 (NT.3), AES; **WATERFORD**: 15.vii.1975, 4miles east of Tikineor S304225 (NU.4), AES; 1.vii.1984, Portally Cove X6798 (PT.1), JPOC; 4.vii.1989, Ballin Lough, Kill S4403 (PT.1), JMOC; 19.vi.1991, Ballin Lough,

S4403 (PT.1), JPOC; **WESTMEATH**: 21.vii.1958, Moate (NV.4), GV; 2.vii.1980, Coosan Lough N0554 (NV.4), JPOC; 22.vi.1989, Ballynafid Lough N4060 (PV.2), JPOC; **WEXFORD**: 14.vii.1975, Orristown T0413 (PT.3), AES; 15.vii.1975, near Newbawn S856244 (PU.4), AES; **WICKLOW**: 10.vii.1971, Glendalough (PU.3), PJC; 6.vii.1973, Glendalough (PU.3), MD; 24.vi.1975, Glendalough T1-9-(PU.3), PJC; 26.vi.1975, Bellevue Woods, Glen of the Downs O2-1- (PU.3), PJC; vi.1988, Blackditch Wood O3103 (PU.3), REB/RMB (Blackith *et al*., 1991); vi.1988, Killoughter Marsh Field T3199 (PU.3), REB/RMB (Blackith *et al*., 1991); vi.1988, Clomannon Wood T3098 (PU.3), REB/RMB (Blackith *et al.* 1991).

***Tipula* (*Lunatipula*) *lunata* Linnaeus, 1758**

This species favours lush woods and their margins and has a flight period from May to July (Stubbs, 1992).

CLARE: 30.v.1984, near Ennis, hazel *Corylus* wood R292796 (MU.3), JPOC; 31.vi.1992, Kilshanny, hedgerows R1292 (MU.3), JPOC; **CORK**: 16.vii.1975, Mallow W550980 (NT.1), AES; **DUBLIN**: v.1893, Dublin (PV.4), JNH; 20.vii.1958, Dublin (PV.4), GV; **KILDARE**: 11.vii.1982, Newbridge Fen N7616 (PU.1), JMOC; **MAYO**: no date [1909-1911], Belclare (MV.3), JNH (Grimshaw, 1912 sub *ochracea*); vii.1910, Mulranny or Molrenny [= Mallaranny] (MV.1), PHG (Grimshaw, 1912 sub *ochracea*); **MEATH**: 31.v.1989, Batterjohn Big N8953 (PV.4), JPOC; **WATERFORD**: 1.vii.1984, Portally Cove X6798 (PT.1), JPOC; **WESTMEATH**: 30.v.1990, Derravaragh Lough N4762 (PV.2), JPOC; **WICKLOW**: v.1989, Blackditch Wood, bred from rotten birch *Betula* O3103 (PU.3), REB/RMB (Blackith *et al*., 1991) .

***Tipula* (*Lunatipula*) *peliostigma* Schummel, 1833**

Feeney (1968) mentions a record of *peliostigma* described as follows "Grimshaw, Mulranny, 1909" which appears to indicate a specimen from the Clare Island Survey. However, there is no mention of the species *peliostigma* in Grimshaw (1912) although there are some records for a few other Tipulidae from this County Mayo locality.

CARLOW: viii.1964, 12.viii.1965, 15.viii.1965, Carlow Town (PU.1), AMF (Feeney, 1968); **LEITRIM**: viii.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 20.viii.1963, Drumshambo

North (NV.3), AMF.

***Tipula* (*Odonatisca*) *nodicornis* Meigen, 1818**

In Britain, *T. nodicornis* is a rare red data book species and is only known from north-east Scotland from eight (post 1960) 10km grid squares, with a flight period from June to October (Falk, 1991). The habitats includes coastal sand dunes (especially windswept stony ground with sparse vegetation) and the sandy banks of the River Spey and the Dorbach Burn (Cairngorms) in open, or more rarely, shaded situations (Stubbs, 1992). The common denomonators in terms of habitat seem to be sandy, usually open, sparsely vegetated areas which are probably influenced by freshwater.

DERRY: 8.viii.2002, Garvagh Wood (PA.1), JMcB (Langton, 2005).

***Tipula* (*Platytipula*) *luteipennis* Meigen, 1830**

There is a single Irish Haliday specimen in the National Museum of Ireland collection which is presumed to be the specimen queried in Haliday (1833).

There is one dot for County Down plotted on the Irish map for this species in Stubbs (1992) but the data is not accessible at present.

CAVAN: 12.ix.1991, Woodlawn, Lough Sheelin N4686 (PV.1), JPOC; **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833 sub "*luteipennis* ?"); **GALWAY**: 22.ix.-3.x.1974, Roundstone (MV.2), PO; 25-27.ix.1974, Maam Cross, 12km [error = 12miles] west of Cong (MV.4), MD; **KERRY**: 8.ix.1982, Ardfert Q7821 (MT.1), EGH (Hancock, 1990); **LAOIS**: 20.ix.1982, The Derries, mixed wood N586050 (PU.1), JPOC; **MAYO**: 25-27.ix.1974, Cong (MV.4), PO; **WICKLOW**: 23.ix.1989, Calary Lower O2311 (PU.3), JMOC.

***Tipula* (*Platytipula*) *melanoceros* Schummel, 1833**

In Chandler (1998), *melanoceros* is listed as "?+" indicating a doubtful 19th century published Irish record based on its inclusion in Walker (1856). However, in Haliday's unpublished ms 'Catalogue of Irish insects', on page 207 (Fig. 3), the species "*flavo-lineata* ??" is crossed out and replaced by "*melanoceros* Schu" in the right hand margin. This indicates that Haliday's original identification of *flavolineata* and its inclusion in Haliday (1833), was based on a misidentification and that the correct name to apply was *melanoceros*. The entry in Walker

(1856: 328) under "*melanoceras*" says " Very rare. In Mr. Haliday's collection. (I.)" where the "(I.)" is the abbreviation for Ireland. Although the record based solely on Walker (1856) was considered doubtful the new information from Haliday's ms 'Catalogue of Irish insects' and the locality data (Holywood, County Down) provide a stronger basis for accepting the record even though the original Haliday specimen has apparently not survived.

The Oosterbroek specimen from County Galway, in the Amsterdam Museum, is the only known Irish specimen and confirm *melanoceros* as an Irish species.

DOWN: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833, misidentified as *flavolineata*); **GALWAY**: 24.ix.-2.x.1974, Recess (MV.4), PO.

***Tipula* (*Pterelachisus*) *irrorata* Macquart, 1826**

In Britain it is a widespread woodland species which is easily overlooked because the adults sit well camouflaged on tree trunks and deciduous logs (Stubbs, 1992) and this may explain the lack of any other Irish records.

DOWN: 18.ix.1969, Ballywalter J6269 (UF.2), AGI (Nash, 1989).

***Tipula* (*Pterelachisus*) *pseudovariipennis* Czizek, 1912**

A Feeney specimen in the National Museum of Ireland, collected on the 9th June 1964, has no county indicated but only a locality named "Aughnaglase" on the data label. No locality named "Aughnaglase" has been discovered but several other Feeney specimens are from obscure localities many of which have been found in the southern part of County Leitrim and frequently in the parish of Cloone. It is therefore assumed that "Aughnaglase" is in the same part of County Leitrim.

LEITRIM: vi.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 9.vi.1964, Aughnaglase (NV.3), AMF.

***Tipula* (*Pterelachisus*) *submarmorata* Schummel, 1833**

Data for two of the dots (Counties Antrim and Kerry) plotted on the Irish map for this species in Stubbs (1992) are currently not available.

CAVAN: 15.v.1989, Virginia Woods N5987 (PV.1), JPOC; **CLARE**: 19.v.1970, glen below Moy House, near Lahinch (MU.3), PJC; 30.v.1984, near Ennis R292796 (MU.3), JPOC;

GALWAY: no date [circa 1893-1896], Ballynahinch (MV.2), JNH; 24.vii.1982, Letterfrack L6857 (MV.2), JMOC; **LEITRIM**: 10.v.1970, Lough Rinn (NV.3), PJC; **SLIGO**: 13.v.1970, Glen of Knocknarea (NA.2), PJC; 15.v.1970, Lissadell (NA.2), PJC; **WICKLOW**: 10.v.1984, Knocksink O2117 (PU.3), JMOC; 15.v.1991, Knocksink O2117 (PU.3), JPOC; 27.v.1988, Avondale T1985 (PU.3), JPOC.

***Tipula* (*Pterelachisus*) *varipennis* Meigen, 1818**

There are six dots on the Irish map for this species in Stubbs (1992) for which the original data is not checkable at present.

ANTRIM: 19.v.1992, Collin Glen J2772 (PA.3), KNAA; 11.vi.1992, Breesha Wood, Murlough Bay D193418 (PB.4), KNAA; **CLARE**: 7-8.vi.1970, Burren, near Caher River M1704 (MU.3), RIVW; **GALWAY**: vii.1895, Oughterard (MV.4), GHC; **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE; 28.vi.1969, by River Gweestin, Caherdean (MT.3), PJC; 30.vi.1969, Ross Island, Killarney (MT.3), PJC; 12.vi.1970, Brandon Point Q525171 (MT.1), RIVW; 13.vi.1970, Brandon Point to Creek Point Q5117 (MT.1), RIVW; 17.vi.1970, above Queen's Cottage, Killarney V960850 (MT.3), RIVW; **KILDARE**: v.1894, Maynooth (PV.4), GHC (Carpenter, 1908); **LEITRIM**: vi.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 8.vi.1963, Carickvoher (NV.3), AMF; **MAYO**: vi.1909, Curraun [= Corraun] District (MV.1), RFS (Grimshaw, 1912); no date [1909-1911], Belclare (MV.3), JNH; **ROSCOMMON**: 11.v.1970, Lough Key National Forest Park (NV.1), PJC; **WATERFORD**: 30.vi.1907, Stradbally (PT.1), HWA (Hobby and Smith, 1961, sub *variipennis*); 22.vi.1970, Cappoquin X092994 (NT.3), RIVW; 4.vii.1989, Ballin Lough S4403 (PT.1), JMOC; **WEXFORD**: 14.vi.1982, Ballyhighland S882407 (PU.4), JMOC; 15.vi.1990, Tintern Abbey S7810 (PT.1), JPOC; **WICKLOW**: 13.v.1934, Clara (PU.3), AWS; 10.v.1984, Knocksink O2117 (PU.3), JMOC; 15.vi.1988, Powerscourt O2012 (PU.3), JPOC.

***Tipula* (*Savtshenkia*) *alpium* Bergroth, 1888**

Grimshaw (1912), in the Clare Island Survey, recorded "*T. rufina* Mg." from three localities and specimens from all three localities exist in the National Museum of Ireland. However, the specimens from Glendarary (or Glendarie) and Achill Sound were misidentified and re-

determined as *alpium* by R. I. Vane-Wright in 1971. The Clare Island specimens were correctly identified as *rufina* (see below) and the identification confirmed by R. I. Vane-Wright.

There is one dot for County Tyrone plotted on the map for this species in Stubbs (1992) for which we do not have the relevant data.

ANTRIM: 14.vi.1973, Rea's Wood, marshy ground near lake shore J1485 (PA.3), RN (Nash, 1989); **CORK**: 19.vi.1970, Healy Pass V785534 (MT.2), RIVW; 29.v.1974, Dereenacarrin V8-5- (MT.4), KCS; **GALWAY**: 24.ix.-2.x.1974, Recess (MV.4), PO; **KERRY**: 17.vii.1975, Upper Lake area, Killarney V917820 (MT.3), AES; 13.ix.1982, Loch Slat Q601080 (MT.1), EGH (Hancock, 1990); 14.ix.1982, near Dreenagh Q715320 (MU.2), EGH (Hancock, 1990); **MAYO**: 12.vi.1909, Glendarary or Glendarie, Achill Island (MV.1), ?JNH (Grimshaw, 1912 sub *rufina* Mg.); no date [1909-1911], Achill Sound (MV.1), WFJ (Grimshaw, 1912 sub *rufina* Mg.); **WICKLOW**: vii.1891, Glendasan [near Glendalough] (PU.3), GHC; 4.vi.1910, Lough Bray (PU.3), anon.; 20.vii.1958, Sally Gap (PU.3), GV; 16.ix.1968, Rí Fearta Church, Glendalough (PU.3), PJC.

***Tipula* (*Savtshenkia*) *confusa* van der Wulp, 1883**

Data for the dot for County Down plotted on the Irish map for this species in Stubbs (1992) is currently not available.

CARLOW: 20.x.1964, Carlow Town (PU.1), AMF; **CORK**: 15.ix.1968, Denis Donovan's Bar, Castletownbere, "in Guiness" [= Guinness] (MT.2), PSB and HS; **DOWN**: 6.ix.1926, Newcastle (UF.2), WFJ; **DUBLIN**: 6.x.1985, Malahide Castle O2245 (PV.4), JMOC; **GALWAY**: 22.ix.-3.x.1974, Roundstone (MV.2), PO; 22.ix.-4.x.1974, near Roundstone (MV.2), MD; 24.ix.-2.x.1974, Recess (MV.4), PO; 2.x.1974, Killary Harbour (MV.4), MD; 4.x.1974, near Roundstone (MV.2), MD; **KERRY**: 15.ix.1981, Tomies Wood, Killarney V915885 (MT.3), by stream, JPOC; 18.ix.1981, Flesk River W035875 (MT.3), JPOC; 10.ix.1981, Muckross House, Killarney, resting in a garden plant V967860 (MT.3), JPOC; 13.ix.1982, Loch Slat Q601080 (MT.1), EGH (Hancock, 1990 sub *marmorata* Meigen); 14.ix.1982, near Dreenagh Q715320 (MU.2), EGH (Hancock, 1990 sub *marmorata* Meigen); **LEITRIM**: x.1963, Carrigallen (NV.3), AMF (Feeney, 1968, sub *marmorata* Meigen); 10.x.1963, Cloone (NV.3), AMF (Feeney, 1968,

sub *marmorata* Meigen); **MAYO**: 25-27.ix.1974, Cong (MV.4), PO; 25.ix-2,x.1974, Ashford Castle, Cong (MV.4), MD; **ROSCOMMON**: 28.ix.1977, Castlerea M6-8- (NV.1), PJC; **WICKLOW**: 17.ix.1968, Glenmacnass (PU.3), PJC; vii.1988, Clonmannon Wood T3098 (PU.3), REB/RMB (Blackith *et al*., 1991, sub *marmorata* Meigen).

***Tipula* (*Savtshenkia*) *obsoleta* Meigen, 1818**

Data relating to the single dot (probably County Roscommon) for this species on the Irish map in Stubbs (1002) is currently unavailable.

CARLOW: 30.ix.1968, Carlow Town, light trap (PU.1), AMF; 16.x.1968, Fernglade, Carlow Town, on the hall door (PU.1), AMF; **DUBLIN**: x.1906, Lambay Island (PV.4), JNH (Grimshaw and Halbert, 1907); **WICKLOW**: xi.1989, Blackditch Wood O3103 (PU.3), REB/RMB (Blackith *et al*., 1991).

***Tipula* (*Savtshenkia*) *pagana* Meigen, 1818**

Tipula dispar Haliday, which is now a junior synonym of *pagana*, was described as a new species from male and female specimens collected by Haliday near Holywood, Co. Down (Haliday, 1833). There are five Irish Haliday specimens in the National Museum of Ireland (NMI) pinned collections which were labelled as types by R. I. Vane-Wright in 1970. All five specimens have (i) a label with "Ireland" (printed in black ink) indicating that the specimen is definitely of Irish origin and (ii) a white label with the word Haliday (printed in black ink) underneath which is printed in black ink "20.2.'82" which is a Museum accession label which indicates that the specimen came from the Haliday's collection and was registered into the NMI collections on the 20th February 1882. One specimen, an adult female, has a determination label "*Tipula dispar* Haliday det. R. I. Vane-Wright, 1970 LECTOTYPE" and a separate circular white label with a purple border and the word "Lectotype" printed in black. The remaining four specimens each has a similar determination label except for the word "PARALECTOTYPE". Pinned beside the five specimens is a label with the words 'Lectotype designation to be made (m/s) det. R. I. Vane-Wright, 1970". A formal type designation has never been published and we therefore take the opportunity of formally selecting the adult female as Lectotype (as already indicated on labels so marked by R. I. Vane-Wright) and the

remaining four specimens as Paralectotypes (as indicated on the det. labels affixed by R. I. Vane-Wright).

CARLOW: 25.x.1968, Fernglade, Carlow Town (PU.1), AMF; **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833 sub *dispar* Haliday); **DUBLIN**: x.1894, Sutton (PV.4), JNH; x.1906, Lambay (PV.4), ?JNH; 25.x.1908, Rathmines (PV.4), NES; 9.xi.1983, Scholardstown Road, Dublin 16, on the walls of a house (PV.4), BOF; **KILDARE**: 11.x.1985, Donadea Forest Park N8332 (PV.2), JPOC; **LAOIS**: 11.vi.1983, The Derries N583051 (PU.1), JMOC; **LEITRIM**: x.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 20.x.1963, Drumshambo North (NV.3), AMF; 24.x.1963, Tooma (NV.3), AMF; **LAOIS**: 16.x.1968, Arles [= Arless] (PU.1), AMF; **MEATH**: 20.x.1989, Ballivor N6554 (PV.2), JMOC; **WICKLOW**: ix.1894, Avoca (PU.3), anon.; 29.ix.1894, Ballyarthur Woods, Woodenbridge (PU.3), GHC (Carpenter, 1894); 28.ix.1909, Lough Dan (PU.3), JNH; 16.ix.1968, Glenmalure (PU.3), PJC; 17.ix.1968, Glenmacnass (PU.3), PJC; 20.ix.1968, Lugduff Brook, Glendalough (PU.3), PJC; 4.x.1980, Avondale (PU.3), PJC.

***Tipula* (*Savtshenkia*) *rufina* Meigen, 1818**

Grimshaw (1912), in the Clare Island Survey, recorded "*T. rufina* Mg." from three localities and specimens from all three localities exist in the National Museum of Ireland. Only the Clare Island specimens were correctly identified as *rufina* and the identification confirmed by R. I. Vane-Wright. The specimens from Glendarary (or Glendarie) and Achill Sound were misidentified and re-determined as *alpium* by R. I. Vane-Wright (see above).

Data for one of the dot for County Down plotted on the Irish map for this species in Stubbs (1992) is currently not available.

ANTRIM: 24.v.1975, Slievenance, near Trostan D1621 (PB.4), AGI; **CARLOW**: 24.vii.1964, Carlow Town (PU.1), AMF (Feeney, 1968); **CORK**: 4.ix.1968, Skibbereen, at light in guest house (MT.4), PSB and HS; **DOWN**: 11.v.1966, Bangor J3-7- (UF.1), AGI or RN; 12.v.1969, Stormont J3-7- (UF.1), AGI or RN; **GALWAY**: no date [*circa* 1893-1896], Ballynahinch (MV.2) JHN; no date [*circa* 1893-1896], Roundstone (MV.2) JHN; 22.ix-4.x.1974, near Roundstone (MV.2), MD; **KERRY**: 18.viii.1902, Kenmare (MT.4), JJFXK; 14.ix.1982, near

Dreenagh Q715320 (MU.2), EGH (Hancock, 1990); **KILDARE**: 12.iv.1982, Newbridge Fen N767166 (PU.1), JMOC; **LEITRIM**: v.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 15.v.1963, Drumshambo North (NV.3), AMF; **MAYO**: 10.ix.1909, Clare Island (MV.1), PHG (Grimshaw, 1912); **SLIGO**: 15.v.1970, Lissadell Estate (NA.2), PJC; **WICKLOW**: 3.vi.1970, near Kippure O140140 (PU.3), RIVW; 16.iv.1982, Russborough N9611 (PU.3), JMOC.

***Tipula* (*Savtshenkia*) *signata* Staeger, 1840**

First recorded from Ireland in Ashe *et al.* (1991). All the records detailed below, except the County Galway record, are plotted on the map for Ireland in Stubbs (1992).

GALWAY: 24.vii.1982, Rosteague House L6857 (MV.2), JMOC; **MAYO**: 29.ix.1977, Westport Demesne L9884 (MV.3), PJC (Ashe *et al.*, 1991); **ROSCOMMON**: 28.ix.1977, Castlerea M6-8- (NV.1), PJC (Ashe *et al.*, 1991); **SLIGO**: 1.x.1977, Ballinacarrow G6-1- (NV.1), PJC (Ashe *et al.*, 1991); 1.x.1977, Templehouse G6-1- (NV.1), PJC (Ashe *et al.*, 1991).

***Tipula* (*Savtshenkia*) *staegeri* Nielsen, 1922**

There are two dots on the Irish map for this species in Stubbs (1992) for which the original data is currently unavailable.

DUBLIN: 26.ix.1999, River Liffey, Strawberry Beds O0635 (PV.4), PJC; **GALWAY**: 2.x.1974, Twelve Pins (MV.2), MD; **KERRY**: 15.ix.1973, Drominahassig (MT.4), PJC; **LEITRIM**: 10.x.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 10.x.1964, Drumshambo North (NV.3), AMF; 2.x.1977, Glencar G7-4- (NA.2), PJC; **MAYO**: 30.ix.1977, Lough Conn, north of Pontoon G1-0- (MV.3), PJC; **ROSCOMMON**: 28.ix.1977, Lough Key Forest Park G8-0- (NV.1), PJC; **SLIGO**: 1.x.1977, Ballinascarrow G6-1- (NV.1), PJC; 1.x.1977, Templehouse G6-1-(NV.1), PJC; 1.x.1977, Glen of Knocknarea G6-3- (NA.2), PJC; 1.x.1977, Coolaney [error = Collooney] G6-2- (NA.2), PJC; **WICKLOW**: x.1988, Blackditch Wood O3103 (PU.3), REB/RMB (Blackith *et al.*, 1991); x.1988, Killoughter Marsh Field T3199 (PU.3), REB/RMB (Blackith *et al.*, 1991).

***Tipula* (*Savtshenkia*) *subnodicornis* Zetterstedt, 1838**

Data for a dot (in south County Down) plotted on the Irish map for this species in Stubbs (1992) is currently not available.

ANTRIM: 24.v.1975, Slievenance, near Trostan D1621 (PB.4), AGI; **GALWAY**: no date [*circa* 1893-1896], Ballynahinch (MV.2), JNH; **KERRY**: 27.v.1927, Mangerton Mountain, 2,756feet (MT.3), AJL (Coe, 1950: 17, "Ireland (Kerry)"); **WICKLOW**: 4.vi.1910, Glenmalure (PU.3), anon. (Anon., 1910 sub *plumbea*); 4.vi.1910, Lugnaquilla (PU.3), anon. (Anon., 1910 sub *plumbea*); 3.vi.1970, near Kippure O140140 (PU.3), RIVW.

***Tipula* (*Schummelia*) *variicornis* Schummel, 1833**

The *variicornis* record in Grimshaw (1912) from Glendaray (or Glendarie) on Achill Island is a misidentified specimen of *yerburyi* (see below).

Data for the dot in County Down plotted on the Irish map for this species in Stubbs (1992) cannot be accessed at present.

ANTRIM: 19.v.1992, Collin Glen J2772 (PA.3), KNAA; **CLARE**: 18.v.1988, Black Head M1508 (MU.3), KNAA; 7.vi.1970, Lough Atorick R635960 (NU.1), RIVW; 7-8.vi.1970, Burren, near Caher River M1704 (MU.3), RIVW; 8.vi.1970, Spectacle Bridge, Lisdoonvarna R125975 (MU.3), RIVW; 29.v.1992, Corkscrew Hill, Burren M2020 (MU.3), JPOC; 30.v.1992, near Ballyvaughan, Burren M2207 (MU.3), JPOC; **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833 sub *annulicornis*); **GALWAY**: 29.v.1994, Derryclare Oakwood L8349 (MV.2), KNAA; **KERRY**: 26.v.1994, Tomies Wood, Killarney V9188 (MT.3), KNAA; **LAOIS**: 6.vi.1970, The Cut, Slieve Bloom Mountains N295045 (NU.3), RIVW; **OFFALY**: 16.vi.1993, Slieve Bloom Mountains N2703 (NU.3), KNAA; **WEXFORD**: 3.vi.1986, Ferrycarrig, marsh with birch and hazel T005228 (PT.3), JMOC; **WICKLOW**: 27.v.1931, Deerpark, Powerscourt (PU.3), AWS; 10.vii.1971, Glendalough (PU.3), PJC; 24.vi.1975, Glendalough T1-9-(PU.3), PJC; 25.vi.1975, Devil's Glen T2-9- (PU.3), PJC; 27.v.1988, Avondale T1985 (PU.3), JPOC; 15.v.1991, Knocksink O2117 (PU.3), JPOC.

***Tipula* (*Schummelia*) *yerburyi* Edwards, 1924**

The specimens listed by Yerbury (1902) from Glengarriff under the name "*Pachyrrhina annulicornis* Meig." and by Grimshaw (1912) from Glendarary on Achill Island under the name "*T. variicornis* Schum." are in the National Museum of Ireland collections and both were re-identified as *yerburyi* by R. I. Vane-Wright in 1971. The Achill specimen appears to be the

most northerly record of the species in the British Isles based on the published data in the cranefly atlas (Stubbs, 1992) which shows that in Britain the species is confined to Wales and southern England.

CORK: 17.vi.1901, Glengariff (MT.4), JWY (Yerbury 1902, sub *Pachyrrhina annulicornis* Meig.); 19-20.vi.1970, Glengarriff State Forest V9157 (MT.4), RIVW; **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE (Edwards, 1929; Audcent, 1932; Parmenter, 1942); 13.vi.1970, Brandon Point to Creek Point Q5117 (MT.1), RIVW; 16.vi.1970, Torc Cascade, Killarney V967844 (MT.3), RIVW; 16.vi.1970, near Dinnis Island, Killarney V945848 (MT.3), RIVW; 16.vi.1970, near Ballaghbearma Gap V773750 (MT.1), RIVW; 17.vii.1975, Upper Lake area, Killarney V917820 (MT.3), AES; **MAYO**: 12.vi.1909, Glendarary or Glendarie, Achill Island (MV.1), JNH (Grimshaw, 1912 sub *variicornis* Schummel); **TIPPERARY**: 16.vii.1975, Burncourt R937192 (NT.3), AES.

***Tipula* (*Tipula*) *oleracea* Linnaeus, 1758**

Based on the available records, *T. oleracea* is the commonest and most widely distributed of the Irish Tipulidae. In Anon. (1895: 346) and Carpenter (1912), *oleracea* as a pest is mentioned but no locality or any other details are provided. Some records in Carpenter (1903, 1904, 1905, 1911) concerning *oleracea* as an agricultural pest is reported from various counties, including Derry, Down Waterford and Wexford, but lack specific localities and because of this the UTM square cannot be plotted because each county occupies parts of several grid squares.

Data for fifteen of the dots plotted on the Irish map for this species in Stubbs (1992) are unavailable at present.

The editor of the journal in response to a query concerning a crane fly by Dale (1938) is of the opinion that the species seen may be *oleracea* but no information is provided concerning the date, locality or any other pertinent data.

ANTRIM: 9.viii.1974, Lady Bay, Lough Neagh J0969 (PA.4), AGI; 21.viii.1974, Masserene J1485 (PA.3), AGI; 24.v.1975, Glarryford Bog, near Clogh Mills D0515 (PA.3), AGI; **CARLOW**: v.1964, 20.ix.1964, Carlow Town (PU.1), AMF (Feeney, 1968); 24.vii.1975, Graiguealug S766715 (PU.1), AES; **CAVAN**: viii.1908, Cornafean (NV.3), RCF (Carpenter,

1909); 3.viii.1981, lake at Bellananagh H0040 (NA.4), JMOC; 2.x.1989, Virginia Woods N5987 (PV.1), JMOC; 12.ix.1991, Woodlawn, Lough Sheelin N4686 (PV.1), JPOC; **CLARE**: 7.vi.1970, Fanore M133070 (MU.3), RIVW; 7.vi.1970, Lough Atorick R635960 (NU.1), RIVW; 7-8.vi.1970, Burren, near Caher River M1704 (MU.3), RIVW; 8.vi.1970, near Cliffs of Moher R043932 (MU.3), RIVW; 10.vi.1970, Gallows Hill, near Limerick R514636 (NU.2), RIVW; 26.v.1975, Lough Bunny R3695 (NU.1), AGI; 19.vii.1975, Kilkishen R493717 (NU.2), AES; 20.vii.1975, Lough Atedaun, Corrofin R317897 (MU.3), AES; 23.vii.1975, Bridget Lake, Tulla R556810 (NU.1), AES; 9-11.vii.1980, Liscannor, light-trap R0688 (MU.3), JPOC; 16.vii.1981, near Rathborney River, Burren M2105-M2004 (MU.3), JMOC; 21.iv.1984, Alladie M0802 (MU.3), JMOC; 30.v.1984, near Ennis R2979 (MU.3), JPOC; 31.v.1984, Lough Luogh R0593 (MU.3), JPOC; 1.vi.1984, Fanore M136082 (MU.3), JMOC; 28.v.1984, 21.v.1985, Lough Bunny R3696 (NU.1), JMOC; 4.vi.1992, 4.vi.1992, Burren, The Burren M2711 (MU.3), JMOC; 25.v.1992, Lisdoonvarna Spa R1397 (MU.3), JMOC; 27.v.1992, green road, Corker Pass, Burren M3010 (MU.3), JPOC; **CORK**: 3.vi.1893, Dursey Island (MT.2), GHC; 3.vi.1895, Castletown Berehaven (MT.2), GHC; 17-18.vi.1970, coast between Shot Head and Trafrask V8548 (MT.4), RIVW; 16.vii.1975, Ahane W224942 (MT.3), AES; 16.vii.1975, Mallow W550980 (NT.1), AES; 8-12.ix.1979, Sherkin Island (MT.4), JPD; 10.vii.1985, Glengarriff, near the Tunnel V9059 (MT.4), JMOC; **DERRY**: 1904, no locality [UTM square cannot be plotted], anon. (Carpenter, 1905); **DONEGAL**: 1903, Culdaff (PB.2), anon. (Carpenter, 1904); **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833); vi.1902, no locality [UTM square cannot be plotted], anon. (Carpenter, 1903); 1903, County Golf Club (UF.2), anon. (Carpenter, 1904); 27.v.1969, Stormont J3-7- (UF.1), AGI or RN; 12-13.viii.1974, Light House Island, Copeland Islands J5985 (UF.1), AGI; 17.viii.1974, Stormont J3974 (UF.1), AGI; 18.viii.1974, Ballygowan J4163 (UF.2), AGI; 18.viii.1998, Mid Island, Strangford Lough J5667 (UF.2), KNAA; **DUBLIN**: v.1904, Sutton (PV.4), anon. (Carpenter, 1905); 1905-06, Lambay Island (PV.4), JNH; v.1917, no locality (PV.4), anon. (Carpenter, 1920); vi.1918, no locality (PV.4), anon. (Carpenter, 1920); 7.viii.1981, Slade of Saggart O0324 (PV.4), JPOC; 26.x.1987, Castleknock O089377 (PV.4), JMOC; **GALWAY**: no date [1890's], Roundstone (MV.2), JNH;

24.vii.1958, between Moycullen and Spiddle (MV.4), GV; 26.vii.1958, Roundstone (MV.2), GV; 22.ix.-3.x.1974, Roundstone (MV.2), PO; 23.ix.1974, Galway [City], (MV.4), PO; 24.ix.-2.x.1974, Recess (MV.4), PO; no date [?vii.1975], Ballyshrule Bridge M798056 (NU.1), AES; **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE; 17-18.v.1968, Killarney, to light (MT.3), BRP; 11.vi.1970, Lough Naparka Q624170 (MT.1), RIVW; 12.vi.1970, Lough Gal Q476068 (MT.1), RIVW; 13.vi.1970, Brandon Point to Creek Point Q5117 (MT.1), RIVW; 14.vi.1970, Lough Guitane W035848 (MT.3), RIVW; 16.vi.1970, Boughill Rock V850755 (MT.3), RIVW; 16.vi.1970, Lough Accose V750850 (MT.1), RIVW; 16.vii.1975, Loo W078810 (MT.3), AES; 18.vii.1975, The Sound, Kenmare V930708 (MT.4), AES; 18.vii.1975, Releagh Bridge, south of Kenmare V923603 (MT.4), AES; 19.vii.1975, Barry's Glen, north of Killarney V954976 (MT.3), AES; 9.ix.1981, Looscaunagh Lough V883794 (MT.3), JPOC; 12.ix.1981, Rossbehy, on sand-dunes, V6492 (MT.1), JPOC; 15.ix.1981, Tomies Wood V915885 (MT.3), JPOC; 16.ix.1981, Ross Castle, Killarney V9588 (MT.3), JPOC; **KILDARE**: 4.vi.1970, Lullybeg N710240 (PV.2), RIVW; 5.vi.1970, Clogheen N620153 (PU.1), RIVW; 9.viii.1981, Rye Water O005363 (PV.4), JMOC; **LEITRIM**: v.1963, Carrigallen (NV.3), AMF (Feeney, 1968); **LIMERICK**: 19.vii.1975, Limerick City R570585, AES (NU.2); 19.vii.1975, Limerick City R575597, (NU.2) AES; 19.vii.1975, Adare Bridge R472466, AES; 3.viii.1988, Castleconnell R6562 (NU.2), JPOC; **MAYO**: no date [1909-1911], Clogher (MV.3), PHG (Grimshaw, 1912); vii.1910, Louisburgh (MV.1), JNH (Grimshaw, 1912); no date [1909-1911], Knappagh (MV.3), PHG (Grimshaw, 1912); no date [1909-1911], Westport (MV.3), PHG (Grimshaw, 1912); 25.vii.1958, 11.vii.1960, Toermakeady [= Toormakeady] (MV.4), GV; 25.vii.1958, Lough Carra (MV.3), GV; 28.iv.1971, Glenamoy, virgin bog, by sweeping along stream (MA.4), anon.; 13.vi.1971, Glenamoy, IBP [= International Biological Programme] shelter belt F862335 (MA.4), anon.; 7.ix.1971, Glenamoy, IBP [= International Biological Programme], virgin bog by stream, anon.; 25-27.ix.1974, Cong (MV.4), PO; **MEATH**: 27.v.1990, Kilmessan N8857 (PV.4), JMOC; 7.v.1991, Batterjohn Big N8953 (PV.4), JPOC; **OFFALY**: 30.iv.1984, Clara Bog N265295 (NV.4), JPOC; **ROSCOMMON**: 11.v.1970, Lough Key National Forest Park (NV.1), PJC; **SLIGO**: 1.x.1977, Ballinascarrow G6-1- (NV.1), PJC; **TIPPERARY**: 22.vi.1975,

Woodroff S1-2- (NU.4), PJC; 22.vi.1975, Marl Bog 'Wildlife Sanctuary', near Dundrum R9-4- (NU.4), PJC; 22.vi.1975, Bansha Wood R9-3- (NU.4), PJC; 23.vii.1975, Riverstown N050033 (NU.3), AES; 27.v.1984, near Ballina, small wood R710725 (NU.1), JPOC; **WATERFORD**: ii.1903, no locality [UTM square cannot be plotted], anon (Carpenter, 1904); vii.1908, no locality [UTM square cannot be plotted], anon.; 22.vi.1970, Cappoquin X092994 (NT.3), RIVW; 22.vi.1970, Glenakeefe [= Glenakeeffe] River S065045 (NT.3), RIVW; 14.vii.1989, Tramore, back strand S5901 (PT.1), JMOC; 18.vi.1990, Ballin Lough, Kill S4403 (PT.1), JMOC; **WEXFORD**: no date [*Circa* 1895-1900], Ballyhyland [= Ballyhighland] (PU.4), CBM (Moffat, 1900); no date [1904] Enniscorthy (PU.4), anon. (Carpenter, 1905); autumn 1910, no locality [UTM square cannot be plotted], anon. (Carpenter, 1911); 25.vi.1970, Cahore T2244 (PU.4), RIVW; 14.vii.1975, Orristown T0413 (PT.3), AES; 15.vii.1975, near Newbawn S856244 (PU.4), AES; 2.ix.1980, Wexford Town T0519 (PT.3); JPOC; 5.ix.1980, Stoneyford T1009 (PT.3), JPOC; 4.vi.1986, The Raven T1026 (PU.4), JPOC; 25.v.1987, Lady's Island Lake T1007 (PT.3), JPOC; 26.v.1987, Ballyteige S9504 (PT.3), JPOC; 29.v.1987, Oaklands S7125 (PU.2), JPOC; 10.vi.1991, Curracloe, marshy area T1127 (PU.4), JPOC; **WICKLOW**: ix.1891, Callary [= Calary] (PU.3), anon.; v.1903, Roundwood (PU.3), anon. (Carpenter, 1904); 1.vi.1970, near Six Mile Point, dykes and reeds O315050 (PU.3), RIVW;16.viii.1981, Russellstown Park N9610 (PU.3), JMOC; i-xii.1988-1989, ubiquitous (i.e. Blackdirch Wood, Clonmannon Wood, Killoughter Marsh Field), (PU.3), REB/RMB (Blackith et al., 1991).

***Tipula* (*Tipula*) *paludosa* Meigen, 1830**

On Lough Neagh there are two localities called Ardmore Point, one in Co. Antrim (on the eastern shore) and one in Co. Armagh (on the southern shoreline).

This species is the main agricultural pest leatherjacket and occurs abundantly in pastures and lawns (Stubbs, 1992) with a widespread distribution in Britain extending from the Isles of Scilly (off south-west Cornwall) as far north as the Shetland Islands.

ANTRIM: 12.vii.1971, Barnett's Park, Belfast J3-7- (UF.2), RN; 21.viii.1974, Masserene J1485 (PA.3), AGI; 5.ix.1974, Ardmore Point, Lough Neagh J0979 (PA.3), AGI; 27.viii.1998, Upper Portnacooly Pond, Ballyconagan Townland, Rathlin Island D145522 (PB.4), KNAA;

27.viii.1998, Western Pond, Ballyconagan Townland, Rathlin Island D144599 (PB.4), KNAA; 28.viii.1998, Aird North, Causeway Coast C9545 (PB.4), KNAA; **ARMAGH**: 31.viii.1974, Ardmore Point, Lough Neagh J0063 (PA.4), AGI; **CARLOW**: vii.1964, Carlow Town (PU.1), AMF (Feeney, 1968); 14.viii.1964, Carlow Town (PU.1), AMF; **CAVAN**: 6.viii.1990, Lough Sheelin N4686 (PV.1), JMOC; 12.ix.1991, Woodlawn, Lough Sheelin N4686 (PV.1), JPOC; **CLARE**: 23.vii.1958, Cliffs of Moher (MU.3), GV; 20.vii.1975, Aglish R325920 (MU.3), AES; **CORK**: 4.ix.1968, Skibbereen, roadside (MT.4), PSB and HS; 5.ix.1968, shore of Lough Hyne, near Skibbereen (MT.4), PSB and HS; 10.ix.1968, slopes of Knockgoura, near Castletownbere (MT.2), PSB and HS; 16.vii.1975, Ballymaquirk Bridge, Banteer W385987 (NT.1), AES; 16.vii.1975, Ahane W224942 (MT.3), AES; 1-15.vii.1977, Sherkin Island (MT.4), ACWNE; 11.viii.1977, Myross Wood, Leap W2036 (MT.4), JEC; **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833); 14.ix.1930, Newcastle (UF.2), VL; 12-13.viii.1974, Light House Island, Copeland Islands J5985 (UF.1), AGI; 18.viii.1974, Ballygowan J4163 (UF.2), AGI; 24.viii.1974, Deer Bay, Main Copeland Island J5983 (UF.1), AGI; **DUBLIN**: no date [1890-1910], Dundrum (PV.4), RFS; 1905-06, Lambay Island (PV.4), JNH (Grimshaw and Halbert, 1907); 19.viii.1951, Tymon Castle, near Tallaght, in disused gravel pit (PV.4), KGVS (Smith, 1952); vii-ix 1960-1963, North Bull Island (PV.4), BH (Healy, 1975a, b; Speight and Healy, 1977); 16.x.1989, North Bull O2337 (PV.4), JPOC; **GALWAY**: 24.vii.1958, between Moycullen and Spiddle (MV.4), GV; 26.vii.1958, Roundstone (MV.2), GV; 22.ix.-3.x.1974, Roundstone (MV.2), PO; 15.vii.1975, near Roundstone (MV.2), HWEC; **KERRY**: 19.vii.1975, Barry's Glen, north of Killarney V954976 (MT.3), AES; 11.ix.1981, Killarney V9586 (MT.3), JPOC; 9.ix.1981, Looscaunagh Lake V8879 (MT.3), JPOC; 4.ix.1981, Long Range, Killarney V9384 (MT.3), JPOC; 8.ix.1982, Ardfert Q7821 (MT.1), EGH (Hancock, 1990); **KILDARE**: 11.ix.1985, Newbridge Fen N7616 (PU.1), JPOC; 30.viii.1991, Louisa Bridge N9986 (PV.4), JPOC; **LEITRIM**: vii.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 20.vii.1960, Drumshambo North (NV.3), AMF; **MAYO**: 10.ix.1909, Clare Island (MV.1), JNH; vii.1910, Clare Island (MV.1), JNM and PHG (Grimshaw, 1912 sub *oleracea*); vii.1910, Mulranny or Molrenny [= Mallaranny] (MV.1), PHG (Grimshaw, 1912 sub *oleracea*); 25.vii.1958, Lough

Carra (MV.3), GV; 31.vii.1971, Glenamoy, IBP [= International Biological Programme], virgin bog by stream (MA.4), anon.; 2.viii.1971, Glenamoy, IBP [= International Biological Programme], virgin bog by stream F865290 (MA.4), anon.; 6.ix.1971, Glenamoy, IBP [= International Biological Programme], virgin bog by stream (MA.4), anon.; **WESTMEATH**: 28.viii.1990, Belvidere House N4247 (PV.2), JMOC; **WEXFORD**: 15.vii. 1975, near Newbawn S856244 (PU.4), AES; 28.viii.1980, 30.viii.1980, 4.ix.1980, Lady's Island Lake T1007 (PT.3), JPOC; 1.ix.1980, 26.viii.1986, Carnsore Point T1203 (PT.3) and T1210 (PT.3), JPOC; 5.ix.1980, Stoneyford T1009 (PT.3), JPOC; **WICKLOW**: 27.viii.1981, Glen of the Downs O2611 (PU.3), JPOC; 16.viii.1981, Russellstown Park N9610 (PU.3), JMOC; vi.-ix.1988, Blackditch Wood O3103 (PU.3), REB/RMB (Blackith *et al*., 1991); 22.viii.1988, near Calary Lower O2311 (PU.3), JPOC.

***Tipula* (*Tipula*) *subcunctans* Alexander, 1921**

Further details on the record from "Ireland" in Audcent (1932: 23, sub *czizek*i de Jong) are lacking because the specimen or specimens on which the record is based have not been located. **CARLOW**: x.1965, Carlow Town (PU.1), AMF (Feeney, 1968); 16.x.1968, Fernglade, Carlow Town, on halldoor (PU.1), AMF.

***Tipula* (*Vestiplex*) *hortorum* Linnaeus, 1758**

In the National Museum of Ireland collections, there are no Haliday specimens of *hortorum* but on page 207 of Haliday's unpublished ms 'Catalogue of Irish insects' (Fig. 3) it shows *nubeculosa*, followed by a + inside a circle, "ha" for Haliday and the name "*hortorum* L.Coll." [= Linnaean Collection] in the right margin. Since there are two specimens under *nubeculosa* in the National Museum of Ireland (see note under *nubeculosa*) it seems that Haliday's use of *hortorum* is an error for *nubeculosa*.

A rare red data book species which is found in old broadleaved woodland (Falk, 1991). **LEITRIM**: vi.1963, Carrigallen (NV.3), AMF (Feeney, 1968).

***Tipula* (*Vestiplex*) *montana* Curtis, 1834**

In Chandler (1998), *montana* is listed as "?+" indicating a doubtful 19th century published record based on the records in Hogan and Haliday (1855, sub *excisa*) and Walker (1856: 323,

sub *excisa*). Although there are no Irish specimens of *montana* from the two Kerry sites in the National Museum of Ireland, there is a Norwegian specimen in the Haliday collection with an old "*T. excisa*" determination label, a name that was sometimes wrongly applied to *montana* specimens. This is a mountain species of exposed stony ridges which generally occurs at altitudes from 450m to well over 900m though it is sometimes found at lower elevations (Stubbs, 1992). The fact that Haliday had a Norwegian reference specimen and that both Kerry sites are at high elevation, with Mount Brandon rising to a height of 952m, indicates that the records are genuine and *montana* is therefore acceptable as a valid Irish species. In addition, the bottom entry on page 207 of Haliday's unpublished ms 'Catalogue of Irish insects' (Fig. 3) lists "*excisa* Schu." followed immediately by "*montana* Cts." [= Curtis] and in the right margin the locality "Slieve Donard" and the month "June". Slieve Donard is a high mountain in south County Down, which peaks at a height of 850m, which Haliday ascended – see Haliday (1833: 154, under *Dicranomyia oscillans*).

DOWN: 1827-1833, Slieve Donard (UF.2), AHH; **KERRY**: vii.1854, Mount Brandon (MT.1), ?AHH (Hogan and Haliday, 1855 sub *excisa* Schummel; Walker, 1856 sub "*excisa* Schumm."); vii.1854, Conner Hill [= Connor Pass], about 1,000feet (MT.1), ?AHH (Hogan and Haliday, 1855 sub *excisa* Schummel; Walker, 1856 sub "*excisa* Schumm.").

***Tipula* (*Vestiplex*) *nubeculosa* Meigen, 1804**

There are two Irish Haliday specimens under *nubeculosa* in the National Museum of Ireland pinned collection. The species is listed on page 207 of Haliday's unpublished ms 'Catalogue of Irish insects' (Fig. 3) and as the note under *hortorum* (see above) explains it seems that Haliday's use of *hortorum* is an error for *nubeculosa*.

A notable red data book species which favours broadleaved valley woods, in upland areas, usually within the proximity of streams (Falk, 1991).

CARLOW: 2.viii.1964, Carlow Town (PU.1), AMF; **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833 sub "*nubeculosa*?"); **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE (Edwards, 1929 sub *rubripes*; Audcent, 1932 sub *rubripes*; Coe, 1950: 20 sub *rubripes*, "S. W. Ireland (Killarney)"); viii.1940, Killarney (MT.3), BPB (Beirne, 1949); 17.vii.1975, Upper

Lake area, Killarney V917820 (MT.3), AES.

***Tipula* (*Vestiplex*) *scripta* Meigen, 1830**

The data for three of the dots on the map of Ireland for this species in Stubbs (1992) is currently inaccessible. It is one of the most ubiquitous species of woodland, especially moist woodland with a good undergrowth (Stubbs, 1992).

ANTRIM: 9.viii.1974, Lady Bay, Lough Neagh J0969 (PA.4), AGI; **CARLOW**: vii.1964, 18.viii.1965, 5.viii.1968, 16.viii.1968, Carlow Town (PU.1), AMF (Feeney, 1968); 18.vi.1991, Bahana Woods S7239 (PU.2), JPOC; **CLARE**: 23.vii.1975, Bridget Lake, Tulla R556810 (NU.1), AES; 31.vii.1988, Fanore M1308 (MU.3), JPOC; 2.viii.1988, Black Head M1512 (MU.3), JMOC; **CORK**: 19-20.vi.1970, Glengarriff State Forest V9157 (MT.4), RIVW; 4.vii.1985, Glengarriff Forest V9157 (MT.4), JMOC; 12.vii.1985, Glengarriff V9256 (MT.4), JMOC; 6.vii.1985, Glengarriff, oak wood V9057 (MT.4), JMOC; **DOWN**: 24.viii.1965, Bangor J3-7- (UF.1), AGI or RN; 12-13.viii.1974, Light House Island, Copeland Islands J5985 (UF.1), AGI; 24.viii.1974, Deer Bay, Main Copeland Island J5983 (UF.1), AGI; **DUBLIN**: ix.1910, Howth Woods (PV.4), JNH; 27.vi. 1975, Howth Woods O2-3- (PV.4), PJC; 7.viii.1981, Slade of Saggart O0324 (PV.4), JPOC; **GALWAY**: 2.x.1974, Twelve Pins (MV.2), MD; **KERRY**: 2.viii.1960, Killarney (MT.3), GV; 13.vi.1970, Brandon Point to Creek Point Q5117 (MT.1), RIVW; 14.vi.1970, Lough Guitane W035848 (MT.3), RIVW; 16.vi. 1970, Torc Cascade, Killarney V967844 (MT.3), RIVW; 16.vi.1970, near Dinnis Island, Killarney V945848 (MT.3), RIVW; 16.vi.1970, Boughill Rock V850755 (MT.3), RIVW; 16.vii.1975, Loo W078810 (MT.3), AES; 17.vii.1975, south of Killarney V932826 (MT.3), AES; 18.vii.1975, River Sheen V955675 (MT.4), AES; 18.vii.1975, Releagh Bridge, south of Kenmare V923603 (MT.4), AES; 19.vii.1975, Barry's Glen, north of Killarney V954976 (MT.3), AES; 9.ix.1981, Galway's Bridge, Killarney V9180 (MT.3), JPOC; 15.ix.1981, Tomies Wood V915885 (MT.3), JPOC; **KILDARE**: 11.vii.1971, Ardscull Mote (PU.1), PJC; **KILKENNY**: 15.vii.1975, Davidstown S646186 (PT.1), AES; **LEITRIM**: vii.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 22.vii.1963, Drumshambo North (NV.3), AMF; **MAYO**: no date [1909-1911], Belclare (MV.3), PHG (Grimshaw, 1912); no date [1909-1911], Brackloon Wood (MV.3), PHG (Grimshaw,

1912); vii.1910, Clare Island (MV.1), PHG (Grimshaw, 1912); no date [1909-1911], Knappagh (MV.3), PHG (Grimshaw, 1912); 25.ix-2.x.1974, Lough Mask (MV.4), MD; **TIPPERARY**: 16.vii.1975, Burncourt R937192 (NT.3), AES; **WATERFORD**: 15.vii.1975, 4miles east of Tikineor S304225 (NU.4), AES; **WICKLOW**: 7.vii.1969, Powerscourt Park (PU.3), PJC; 8.vii.1969, Rí Fearta Church, Glendalough (PU.3), PJC; 24.vi.1975, Derrybawn Woods T1-9- (PU.3), PJC; vi.-viii.1988, vii.1989, Blackditch Wood, bred from birch *Betula* litter O3103 (PU.3), REB/RMB (Blackith *et al*., 1991); 7.viii.1990, Devil's Glen T2399 (PU.3), JMOC; 14.vi.1993, Ballard Wood T1495 (PU.3), KNAA.

***Tipula* (*Yamatotipula*) *couckei* Tonnoir, 1921**

The material identified as "*T. lateralis* Mg." in the Clare Island Survey (Grimshaw, 1912) includes at least three different species - see also notes under *lateralis* and *pierrei*. Two specimens from Castlebar Lough in the National Museum of Ireland, misidentified as *lateralis*, were re-identified in 1971 by R. I. Vane-Wright as *couckei*.

First recorded as new to Ireland in Ashe *et al*. (1991) from localities in several different counties.

Data for one of the dots (County Roscommon, grid ref. N0-5-) on the map of Ireland for this species in Stubbs (1992) is currently unavailable unless the record on the map is a plotting error for the Roscommon record detailed below from grid ref. N0-4-.

ANTRIM: 9.viii.1974, Lady Bay, Lough Neagh J0969 (PA.4), AGI (Ashe *et al*., 1991); **ARMAGH**: 31.viii.1974, Ardmore Point, Lough Neagh J0063 (PA.4), AGI; **CAVAN**: 12.ix.1991, Woodlawn, Lough Sheelin N4686 (PV.1), JPOC; **CLARE**: 7.vi.1970, Lough Atorick R635960 (NU.1), RIVW (Ashe *et al*., 1991); 9.vi.1970, Muckanagh Lough R370922 (NU.1), RIVW (Ashe *et al*., 1991); 28.v.1984, Lough Bunny R3696 (NU.1), JMOC; **CORK**: 16.vii.1975, Kildorrery R723106 (NT.1), AES (Ashe *et al*., 1991); **KERRY**: 14.vi.1970, Lough Guitane W035848 (MT.3), RIVW (Ashe *et al*., 1991); 10.ix.1981, Torc Stream, Killarney V9684 (MT.3), JPOC; 15.ix.1981, Killarney, swept from vegetation beside lake V9391 (MT.3), JPOC; **MAYO**: no date [1909-1911], Castlebar Lough (MV.3), PHG (Grimshaw, 1912 sub *lateralis* Mg.); **ROSCOMMON**: 14.v.1970, Lough Ree N0-4- (NV.4), PJC (Ashe *et al*., 1991);

WESTMEATH: 30.v.1990, Derravaragh Lale N4762 (PV.2), JPOC.

***Tipula* (*Yamatotipula*) *lateralis* Meigen, 1804**

The material identified as "*T. lateralis* Mg." in the Clare Island Survey (Grimshaw, 1912) includes at least three different species:- *lateralis* (from Knappagh), *couckei* (two specimens from Castlebar Lough) and *pierrei* (two specimens from Castlebar Lough and one specimen from Clare Island). See notes under *couckei* and *pierrei*. Material from two further localities, Belclare and near Westport, which were also identified as *lateralis* have not been located and the identifications cannot be checked - these records are omitted from further consideration. The correctly identified l*ateralis* specimen from Knappagh (County Mayo) is in the National Museums of Scotland (Edinburgh) collection.

The data for two of the dots (County Fermanagh and south County Down) on the map of Ireland for this species in Stubbs (1992) is not accessible at present.

ANTRIM: 1.viii.1971, Garron Plateau (PB.4), RN; 21.viii.1974, Masserene J1485 (PA.3), AGI; **ARMAGH**: 31.viii.1974, Ardmore Point, Lough Neagh J0063 (PA.4), AGI; **CARLOW**: vi.1964, Carlow Town (PU.1), AMF (Feeney, 1968); 24.vii.1975, Graiguealug S766715 (PU.1), AES; **CLARE**: 7.vi.1970, Lough Atorick R635960 (NU.1), RIVW; 9.vi.1970, Muckanagh Lough R370922 (NU.1), RIVW; 19.vii.1975, Kilkishen R493717 (NU.2), AES; 21.iv.1982, Lisdoonvarna Spa R1397 (MU.3), JMOC; 22.v.1985, Cooleabeg, damaged blanket bog M1602 (MU.3), JMOC; 26.v.1992, Fanore sand-dunes M1308 (MU.3), JPOC; **CORK**: 4.ix.1968, Sherkin Island, near Baltimore (MT.4), PSB and HS; **DERRY**: 22.v.1975, Traad Point, Lough Neagh H9587 (PA.3), AGI; **DUBLIN**: 7.viii.1981, Slade of Saggart O0324 (PV.4), JPOC; **GALWAY**: 24.vii.1958, between Moycullen and Spiddle (MV.4), GV; 26.vii.1958, Roundstone (MV.2), GV; 22.ix.-3.x.1974, Roundstone (MV.2), PO; 25.vii.1982, Kylemore, mixed wood beside the river L7559 (MV.2), JMOC; **KERRY**: 26.vii.1901, Waterville (MT.2), JWY (Yerbury, 1902); 14.vi.1970, Lough Guitane W035848 (MT.3), RIVW; 15.ix.1981, Killarney, swept from vegetation beside the lake V9391 (MT.3), JPOC; 8.ix.1982, Ardfert Q7821 (MT.1), EGH (Hancock, 1990); **KILDARE**: 9.viii.1981, Rye Water O0036 (PV.4), JMOC; 12.iv.1982, Newbridge Fen N7616 (PU.1), JMOC; 10.iv.1989, Louisa Bridge N9936

(PV.4), JPOC; **LAOIS**: 24.vii.1975, west of Abbeyleix S516840 (PU.1), AES; **LEITRIM**: iii.1963, Carrigallen (NV.3), AMF (Feeney, 1968); 30.iv.1964, Drumshambo North (NV.3), AMF; **LIMERICK**: 19.vii.1975, Limerick City R575597 (NU.2), AES; **MAYO**: 3.vii.1911, Knappagh (MV.3), PHG (Grimshaw, 1912 sub *lateralis* Mg.); **ROSCOMMON**: 11.v.1970, Lough Key National Forest Park (NV.1), PJC; **SLIGO**: 13.v. 1970, Ballysadare Bay (NA.2), PJC; **TIPPERARY**: 23.vii.1975, Riverstown N050033 (NU.3), AES; **WATERFORD**: 15.vii.1975, Carrickbeg S404216 (PT.1), AES; **WESTMEATH**: 31.v.1983, Lough Ennell N3946 (PV.2), JPOC; **WEXFORD**: 15.vii.1975, near Newbawn S856244 (PU.4), AES; 27.viii.1980, Carnsore Point T1203 (PT.3), JPOC; 2.ix.1980, Wexford Town T0519 (PT.3), JPOC.

***Tipula* (*Yamatotipula*) *marginella* Theowald, 1980**

First recorded from Ireland in Ashe *et al*. (1991) based on the two records detailed below. The single dot on the Irish map for this species in Stubbs (1992) represents the County Waterford record detailed below.

LAOIS: 26.vi.1987, Annaghmore Lough N3115 (NU.3), PJC (Ashe *et al*., 1991); **WATERFORD**: 15.vii.1975, Carrickbeg S404216 (PT.1), AES (Ashe *et al*., 1991).

***Tipula* (*Yamatotipula*) *montium* Egger, 1863**

The County Wexford specimens of *montium* collected by J. J. F. X. King on the 28th and 30th June 1902 are in the pinned collection in the Natural History Museum, London. Although specific localities are not given data from the Trichoptera (see Ashe *et al*. 2005a: 315-316) indicates that King was collecting at Edenvale on the 28th June 1902 and in the vicinity of Johnstown Castle and Rosslare on the 30th June 1902.

ANTRIM: 30.vi.1975, Masserene, Lough Neagh J1-8- (PA.3), PJC; **CARLOW**: 17.vi.1991, St Mullin's S7238 (PU.2), JPOC; **CLARE**: 28.v.1984, Lough Bunny R3696 (NU.1), JMOC; **CORK**: 16.vii.1975, Kildorrery R723106 (NT.1), AES; **GALWAY**: 26.vii. 1958, Maam Cross (MV.4), GV; **KERRY**: 17.vii.1975, Cloonee Loughs, south-west of Kenmare V8264 (MT.4), AES; **LIMERICK**: 19.vii.1975, Limerick City R570585 (NU.2), AES; 19.vii.1975, Limerick City R575597 (NU.2), AES; **MAYO**: 25.vii.1958, Toermakeady [= Toormakeady] (MV.4),

GV; **TIPPERARY**: 23.vii.1975, Riverstown N050033 (NU.3), AES; **WEXFORD**: 28.vi.1902, "Wexford" [= Edenvale, near Castlebridge] (PU.4), JJFXK (Coe, 1950: 19, "Ireland"); 30.vi.1902, "Wexford" [= Johnstown Castle and Rosslare] (PT.3), JJFXK (Coe, 1950: 19, "Ireland"); 24.vii.1975, Strahart S958514 (PU.4), AES; 31.iii.1989, Oaklands S7125 (PU.2), JPOC; **WICKLOW**: v.1989, Blackditch Wood, bred from rotten birch *Betula* O3103 (PU.3), REB/RMB (Blackith *et al*., 1991).

***Tipula* (*Yamatotipula*) *pierrei* Tonnoir, 1921**

There are two undated specimens in the National Museum of Ireland (NMI) from the Clare Island Survey, one from Clare Island and one from Castlebar Lough, which were misidentified as *lateralis* (Grimshaw, 1912). Both were subsequently re-identified in 1971 by R. I. Vane-Wright as *solstitialis* Westhoff, a junior synonym of *pierrei*. In the National Museums of Scotland (Edinburgh), there is a specimen of *pierrei*, collected by Grimshaw on the 31st July 1911 from Castlebar Lough, which was also originally misidentified as *lateralis* in Grimshaw (1912). Two further specimens from Castlebar Lough in the NMI, misidentified as *lateralis*, were re-identified in 1971 by R. I. Vane-Wright as *couckei* (see above under *couckei*). In addition, a specimen from Knappagh, in the National Museums of Scotland (Edinburgh), identified as *lateralis* was correctly identified (see above under *lateralis*).

The data for the two westernmost dots for County Clare on the map of Ireland for this species in Stubbs (1992) is currently not accessible.

CLARE: 9.vi.1970, Muckanagh Lough R370922 (NU.1), RIVW; 20.vii.1975, Lough Atedaun, Corrofin R317897 (MU.3), AES; **DUBLIN**: 22.v.1938, Glenasmole (PV.4), AWS; **GALWAY**: 20.vii.1973, Lough Corrib (MV.4), MD; **KERRY**: 26.ix.1901, Waterville (MT.2), JWY (Coe, 1950: 18, sub *solstitialis* Westhoff, "Ireland (Kerry)"); 6.ix.1982, Blennerville, near Tralee Q815135 (MT.1), EGH (Hancock, 1990 sub *solstitialis* Westhoff); **MAYO**: no date [1909-1911], 31.vii.1911, Castlebar Lough (MV.3), PHG (Grimshaw, 1912 sub *lateralis* Mg.); no date [1909-1911], Clare Island (MV.1), PHG (Grimshaw, 1912 sub *lateralis* Mg.); **MONAGHAN**: 15.vii.1971, Lough Muckno (PV.1), PJC; **TYRONE**: 22.v. 1975, Ardboe, Lough Neagh H9675 (PA.3), AGI; 22.v.1975, Washing Bay, Lough Neagh H9066 (PA.4), AGI; **WICKLOW**:

1.vi.1970, near Six Mile Point, dykes and reeds O315050 (PU.3), RIVW.

***Tipula* (*Yamatotipula*) *pruinosa* Wiedemann, 1817**

This species was first published as an Irish species in Walker (1856: 326-327, as "I." [= Ireland]) based on information supplied by Haliday and if this was the only evidence, the record would be considered doubtful. However, there is a Haliday specimen of *pruinosa* in the National Museum of Ireland collections but since it was not included in Haliday (1833) it was probably collected at a later date in the 1830's, in the vicinity of Holywood, County Down. In addition, *pruinosa* is also included on page 207 of Haliday's unpublished ms 'Catalogue of Irish insects' (Fig. 3).

The two dots on the Irish map for this species in the cranefly atlas (Stubbs, 1992) represents the two County Kerry records detailed below.

DOWN: 1834-1839, Holywood (UF.1), AHH (Walker, 1856); **KERRY**: 29.vi.1969, Glenflesk (MT.3), PJC; 17.vii.1975, Derreendarragh V795723 (MT.2), AES.

Discussion

There is only one Irish county (Longford) out of a total of 32 for which there are no Tipulidae records. Based on the available records the most common and widespread Irish species are:- *Nephrotoma flavescens*, *N. flavipalpis*, *N. quadrifaria*, *Prinocera turcica*, *Tipula* (*Acutipula*) *fulvipennis*, *T.* (*A.*) *luna*, *T.* (*A.*) *maxima*, *T.* (*Beringotipula*) *unca*, *T.* (*Lunatipula*) *fascipennis*, *T.* (*L.*) *lunata*, *T.* (*Pterelachisus*) *varipennis*, *T.* (*Savtshenkia*) *confusa*, *T.* (*S.*) *pagana*, *T.* (*S.*) *rufina*, *T.* (*Schummelia*) *variicornis*, *T.* (*Tipula*) *oleracea*, *T.* (*T.*) *paludosa*, *T.* (*Vestiplex*) *scripta*, *T.* (*Yamatotipula*) *couckei*, *T.* (*Y.*) *lateralis* and *T.* (*Y.*) *montium*.

The present paper lists 57 Irish species but in Britain, 90 species are known. Most of the 33 additional British species of Tipulidae could be expected to occur in Ireland. The additional British taxa include the monotypic genus *Nigrotipula* Hutson and Vane-Wright and two further subgenera of *Tipula*.

Based on Falk's (1991) assessment of the scarce and threatened flies in Britain, plus the addition of one species in Hancock (1988), there are 39 British species of Tipulidae which fit

into one of the four main Red Data Book [= RDB] categories. These categories, in order of importance, are "RDB1 - endangered", "RDB2 - vulnerable", "RDB3 - rare" and "notable". Of the 39 British Red Data Book species there are 13 known from Ireland and their identity and ranking based on Falk (1991) is as follows:-

Tipulidae

Ctenophora (*Cnemoncosis*) *ornata*	Endangered
Nephrotoma crocata	Rare
Tipula (*Odonatisca*) *nodicornis*	Rare
Tipula (*Vestiplex*) *hortorum*	Rare
Tipula (*Yamatotipula*) *marginella*	Rare
Ctenophora (*Ctenophora*) *pectinicornis*	Notable
Tanyptera (*Tanyptera*) *atrata atrata*	Notable
Nephrotoma dorsalis	Notable
Nephrotoma lunulicornis	Notable
Tipula (*Lunatipula*) *peliostigma*	Notable
Tipula (*Pterelachisus*) *pseudovariipennis*	Notable
Tipula (*Schummelia*) *yerburyi*	Notable
Tipula (*Vestiplex*) *nubeculosa*	Notable

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TABLE 1. List of 19th century Tipulidae recorded from Ireland in Haliday (1833) and their current status.

Page	Name used by Haliday (1833)	Current Identity of the Name used by Haliday
148, 151	*Dolichopeza sylvicola*	*Dolichopeza albipes* (Ström)
148, 155	*Tipula gigantea*	*Tipula* (*Acutipula*) *maxima* Poda
148	*Tipula lutescens* ?	*Tipula* (*Acutipula*) *fulvipennis* De Geer
148	*Tipula paludosa*	*Tipula* (*Tipula*) *paludosa* Meigen
148	*Tipula oleracea*	*Tipula* (*Tipula*) *oleracea* Linnaeus
148, 155	*Tipula dispar,* N.S.	*Tipula* (*Savtshenkia*) *pagana* Meigen
148	*Tipula luteipennis* ?	*Tipula* (*Platytipula*) *luteipennis* Meigen
148	*Tipula flavolineata*	misidentified = *Tipula* (*Platytipula*) *melanoceros* Schummel
148	*Tipulaa nubeculosa* ?	*Tipula* (*Vestiplex*) *nubeculosa* Meigen
148	*Tipula annulicornis*	*Tipula* (*Schummelia*) *varricornis* Schummel
148	*Tipula crocata*	*Nephrotoma crocata* (Linnaeus)
148	*Tipula cornicina*	*Nephrotoma cornicina* (Linnaeus)

FIGURE 1. Distribution maps, based on the UTM 50km grid, for Tipulidae cranefly species occurring in Ireland, as well as a coverage map for all records.

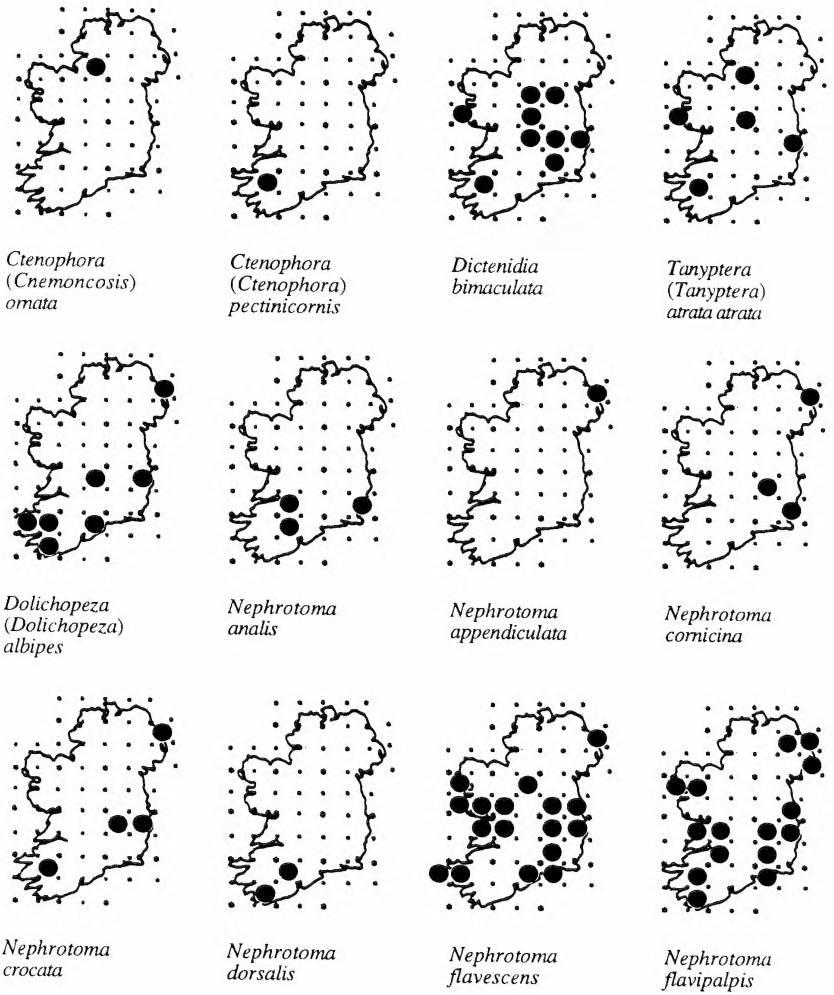
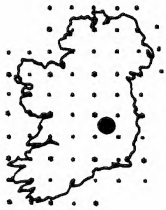
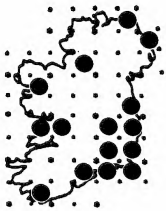


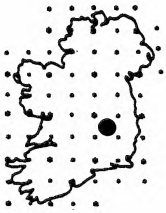
FIGURE 1 (Continued).



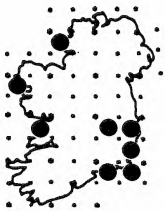
Nephrotoma lunulicornis



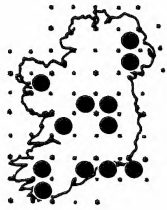
Nephrotoma quadrifaria



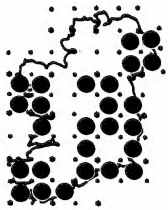
Nephrotoma scurra



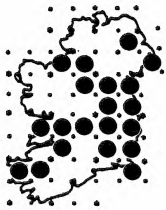
Nephrotoma submaculosa



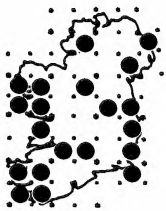
Prionocera turcica



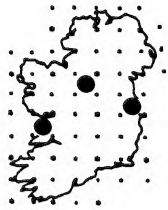
Tipula (Acutipula) fulvipennis



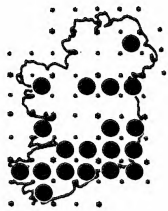
Tipula (Acutipula) luna



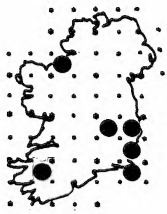
Tipula (Acutipula) maxima



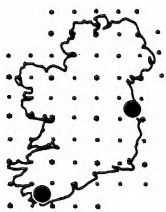
Tipula (Acutipula) vittata



Tipula (Beringotipula) unca

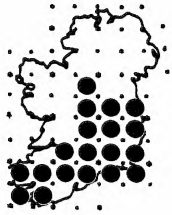


Tipula (Dendrotipula) flavolineata

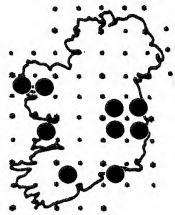


Tipula (Lunatipula) cava

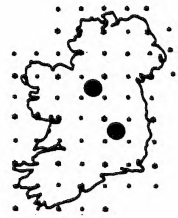
FIGURE 1 (Continued).



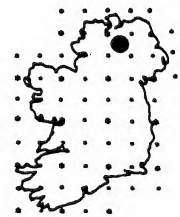
Tipula (*Lunatipula*) *fascipennis*



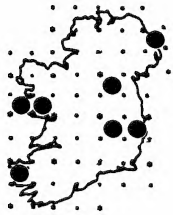
Tipula (*Lunatipula*) *lunata*



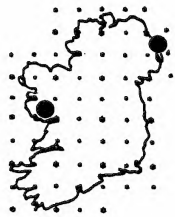
Tipula (*Lunatipula*) *peliostigma*



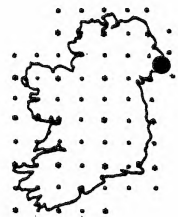
Tipula (*Odonatisca*) *nodicornis*



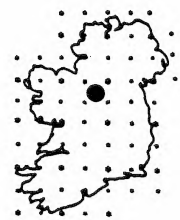
Tipula (*Platytipula*) *luteipennis*



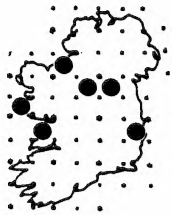
Tipula (*Platytipula*) *melanoceros*



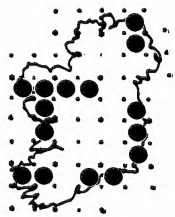
Tipula (*Pterelachisus*) *irrorata*



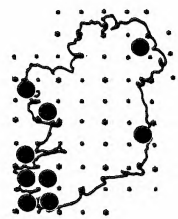
Tipula (*Pterelachisus*) *pseudovariipennis*



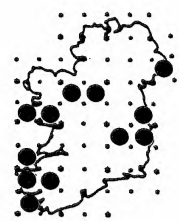
Tipula (*Pterelachisus*) *submarmorata*



Tipula (*Pterelachisus*) *varipennis*

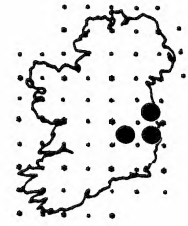


Tipula (*Savtshenkia*) *alpium*

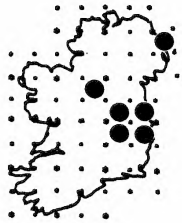


Tipula (*Savtshenkia*) *confusa*

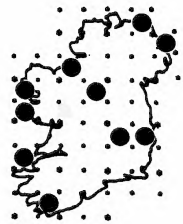
FIGURE 1 (Continued).



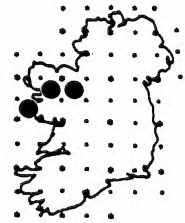
Tipula (*Savtshenkia*) *obsoleta*



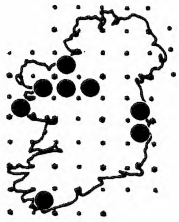
Tipula (*Savtshenkia*) *pagana*



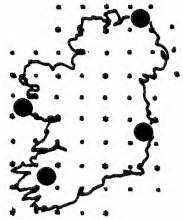
Tipula (*Savtshenkia*) *rufina*



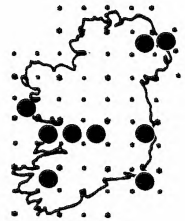
Tipula (*Savtshenkia*) *signata*



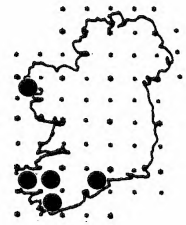
Tipula (*Savtshenkia*) *staegeri*



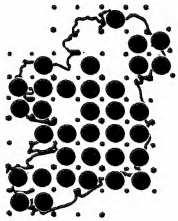
Tipula (*Savtshenkia*) *subnodicornis*



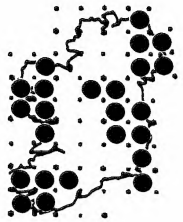
Tipula (*Schummelia*) *variicornis*



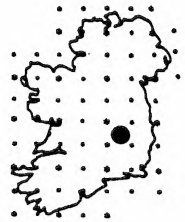
Tipula (*Schummelia*) *yerburyi*



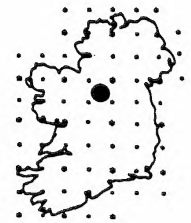
Tipula (*Tipula*) *oleracea*



Tipula (*Tipula*) *paludosa*

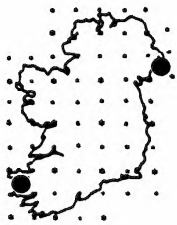


Tipula (*Tipula*) *subcunctans*

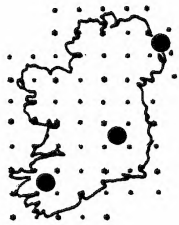


Tipula (*Vestiplex*) *hortorum*

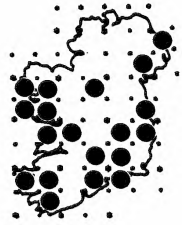
FIGURE 1 (Continued).



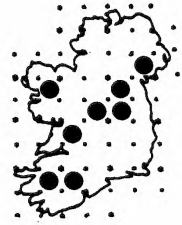
Tipula (*Vestiplex*) *montana*



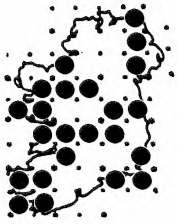
Tipula (*Vestiplex*) *nubeculosa*



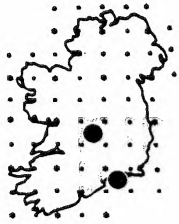
Tipula (*Vestiplex*) *scripta*



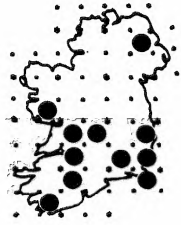
Tipula (*Yamatotipula*) *couckei*



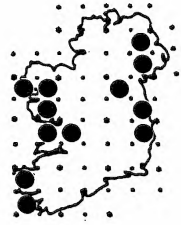
Tipula (*Yamatotipula*) *lateralis*



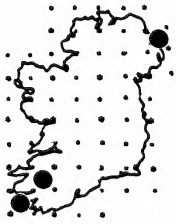
Tipula (*Yamatotipula*) *marginella*



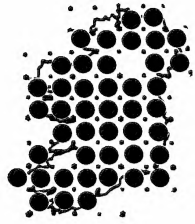
Tipula (*Yamatotipula*) *montium*



Tipula (*Yamatotipula*) *pierrei*



Tipula (*Yamatotipula*) *pruinosa*



Coverage

FIGURE 2. The Universal Transverse Mercator (UTM) 50km grid map for Ireland showing the boundaries of each 50km square and the numbering system.

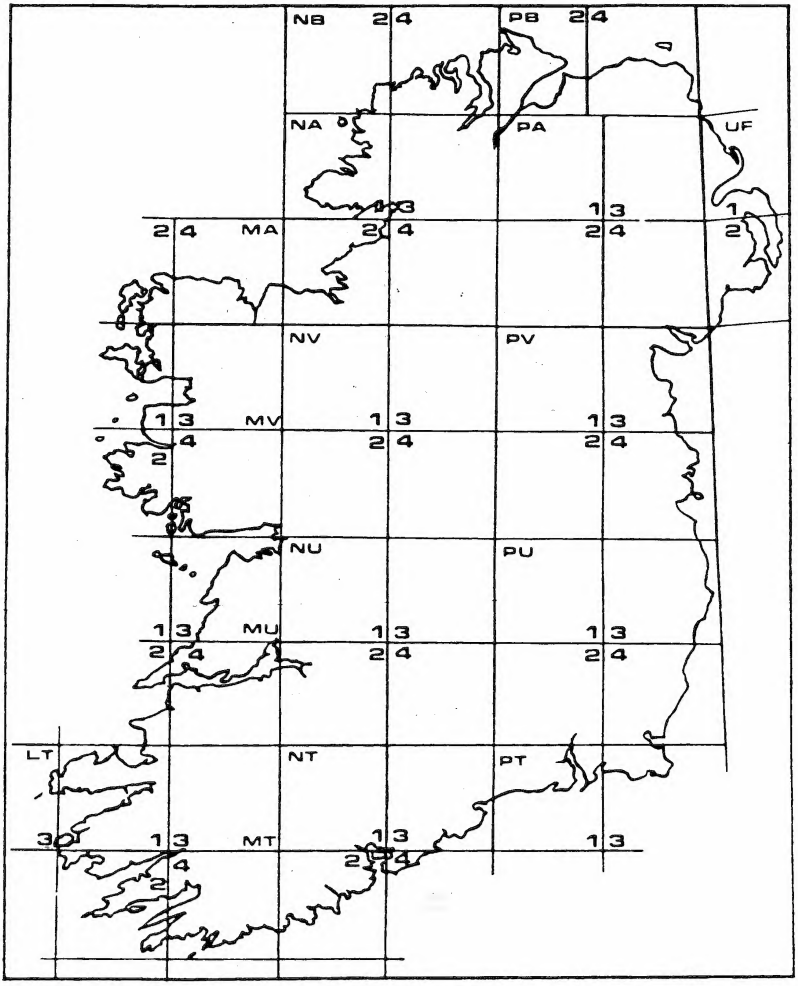
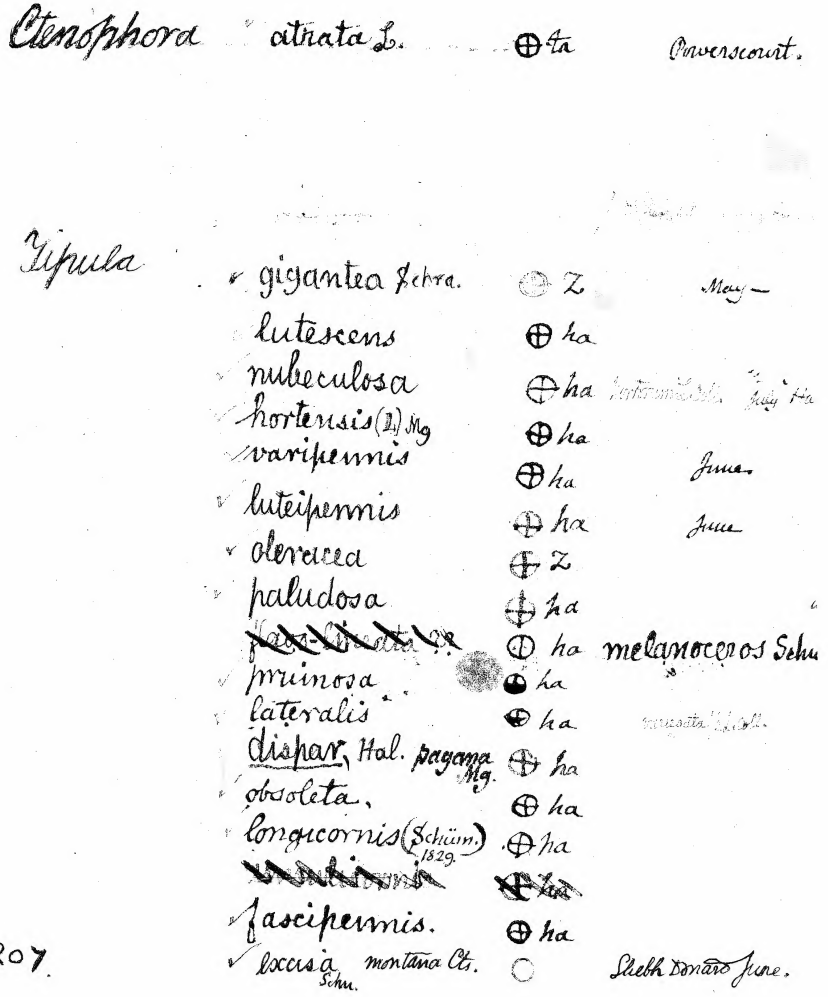


FIGURE 3. Page 207 from Haliday's unpublished ms 'Catalogue of Irish insects' which shows "*Ctenophora atrata* L.", followed by a + inside a circle and "ta" an abbreviation for James Tardy, followed in the right-hand margin by the word "Powerscourt" which is a locality in Co. Wicklow.



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THE CRANEFLIES (DIPTERA) OF IRELAND. PART 6. LIMONIIDAE: CHIONEINAE

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Abstract

The Irish fauna of Chioneinae is represented by 60 species of which four, *Ilisia occoecata* Edwards, 1936; *Molophilus curvatus* Tonnoir, 1920; *Rhypholophus bifurcatus* Goetghebuer, 1920 and *Scleroprocta sororcula* (Zetterstedt, 1851), are recorded from Ireland for the first time. One species, *Ormosia* (*Ormosia*) *lineata* (Meigen, 1804), previously considered as doubtfully Irish based on a published 19th century record is now confirmed as Irish based on new material from several localities.

Introduction

This is the sixth of the review papers on the Irish Craneflies and the fourth and last paper on the Family Limoniidae. The previous five papers in the series are Ashe *et al*. (1995, 1998, 2005a, 2005b, 2007) which provide a detailed review of the records, literature and distribution of all the Irish cranefly species. The most recent checklists of the Irish species of Chioneinae (Ashe, O'Connor and Murray, 1998; Chandler, 1998) lists all the species included in this work

except for *O.* (*O.*) *lineata* (excluded from Ashe, O'Connor and Murray, 1998, included as an unconfirmed Irish species in Chandler, 1998), the three species added in Ashe and O'Connor (2001, 2005) and the four species reported new to Ireland in this paper. The Chioneinae is the largest subfamily of the Limoniidae and is currently represented in Ireland by 60 species whereas in Britain there are 102 species known. It is expected that the majority of the additional 42 British Chioneinae species will eventually be found in Ireland.

Haliday (1833) published the first paper which contained Irish records of species which belong to the subfamily Chioneinae, with four species listed: *Erioptera maculata* Meigen [= *Ilisia maculata* (Meigen, 1804)], *Erioptera varia* Meigen [= *Rhypholophus varius* (Meigen, 1818)], *Erioptera atra* Meigen [= *Molophilus ater* (Meigen, 1804)] and *Symplecta stictica* (Meigen) [= *Symplecta* (*Psiloconopa*) *stictica* (Meigen, 1818)]. In the following decade, Patterson (1842) published records of *Erioptera trivialis* Meigen [= *Erioconopa trivialis*] and a chironomid midge, from several places in and near Belfast City, which formed dense swarms over tall trees which at a distance were initially mistaken by many for smoke from fires. There are a couple of relevant records in Hogan and Haliday (1855). Seven Irish species of Chioneinae are listed in Walker (1856) based on information supplied by Haliday which includes three of the species recorded in Haliday (1833) - see Table 1. Late 19th century records from Boho Cave, County Fermanagh, which were not identified to species, include "*Erioptera* sp." and "*Molophilus* sp." (Jameson, 1896; Hazelton, 1974a, b). Carpenter (1896) contains a record of *Molophilus ater* from County Galway.

During the period 1900 to 1979, a relatively small number of papers were published (Yerbury, 1902; Carpenter, 1908; Grimshaw, 1912; Edwards, 1929, 1938; Coe, 1950; Beirne, 1951; Freeman, 1951; Stubbs and Chandler, 1973; Hazelton, 1974a, b, c; Healy, 1975a, b; Speight and Healy, 1977; Okely, 1979) which included records of Irish Chioneinae. These papers mostly contained from one to several Irish Chioneinae records only, and included common species, first published Irish records and repeated Haliday records. In Hazelton (1974a, c), there is a record of two female specimens of an unidentified "*Molophilus* sp." [as *Melophilus* sp. in Hazelton (1974c)] collected in 1966 from Coolarkin Cave, County Fermanagh.

The first comprehensive paper on the Irish Limoniidae was published by Mendl (1987) which included records of 38 species of Chioneinae from various localities in several Irish counties. An examination of Mendl (1987) for the various species listed (e.g. the genus *Molophilus*) shows that he was able to identify the adult females but he apparently never produced a key to them. In the ms keys to the Limoniidae of the British Isles being finalised by Alan Stubbs, the adult females of many species (including most *Molophilus*) cannot yet be identified with certainty.

The last two decades has seen considerable activity with papers by Blackith and Blackith (1989), Speight (1990), Hancock (1990), Ashe *et al.* (1991), Blackith *et al.* (1991), Ashe and O'Connor (2001, 2005) and Alexander (2005) which include Chioneinae records. In the same period were published the catalogues of Savchenko *et al.* (1992), with many Irish ("IRE") species listed (for widespread species countries are not specified), Ashe, O'Connor and Murray, (1998) and Chandler (1998) which include all the Irish Limoniidae. In addition, the first four parts (Ashe *et al.*, 1995 on the Subfamily Pediciinae, since elevated to family rank; Ashe *et al.*, 1998 on the Subfamily Limoniinae, Ashe *et al.*, 2005a on the Subfamilies Dactylolabinae and Limnophilinae, Ashe *et al.*, 2005b on the Family Cylindrotomidae) of the comprehensive reviews of all Irish cranefly records were published. The present paper (the sixth part) and the fifth part (on the Family Tipulidae) are published together in the same journal issue.

Materials and methods

The Irish national grid reference (six, four or two figure reference) is included where possible followed by the Universal Transverse Mercator (UTM) 50km grid reference in parentheses. The method used to obtain the UTM references is described in Rasmont *et al.* (1986). The data included in Mendl's (1987) work on Irish species are not repeated in detail but the relevant UTM grid references have been calculated for each record and incorporated on the distribution maps (Fig. 1). The nomenclature for the Chioneinae in general follows Savchenko *et al.* (1992) apart from any more recent changes included in Chandler (1998). Species were identified using Coe (1950) and manuscript keys prepared by Alan Stubbs.

In previous papers in this series (Ashe *et al.* 1995, 1998, 2005a, 2005b) records of undated specimens from the Clare Island Survey have been given as:- "no date [1909-1919]" but this should be corrected to :- "no date [1909-1911]" because it is clear from Grimshaw specimens in the National Museums of Scotland (Edinburgh) that some insect material collected in 1911 was included in Grimshaw (1912).

List of collectors and abbreviations used for collectors' names

K. N. A. Alexander = KNAA; P. Ashe = PA; B. P. Beirne = BPB; R. E. Blackith = REB; R. M. Blackith = RMB; P. S. Broomfield = PSB; J. E. Chainey = JEC; P. J. Chandler = PJC; R. L. Coe = RLC; J. H. Cole = JHC; M. Dierks = MD; F. W. Edwards = FWE; P. H. Grimshaw = PHG; J. N. Halbert = JNH; A. H. Haliday = AHH; E. G. Hancock = EGH; B. Healy = BH; A. G. Irwin = AGI; J. J. F. X. King = JJFXK; R. A. Lass = RAL; J. P. O'Connor = JPOC; J. P. O'Connor and M. A. O'Connor = JMOC; E. F. Okely = EFO; P. Oosterbroek = PO; R. Patterson = RP; H. Seal = HS; K. C. Side = KCS; M. C. D. Speight = MCDS; A. E. Stubbs = AES; P. Withers = PW; R. I. Vane-Wright = RIVW; J. W. Yerbury = JWY.

Irish Checklist of Chioneinae

• = species new to Ireland

Subfamily Chioneinae

Cheilotrichia (*Cheilotrichia*) *imbuta* (Meigen, 1818)

Cheilotrichia (*Empeda*) *cinerascens* (Meigen, 1804)

Crypteria limnophiloides Bergroth, 1913

Ellipteroides (*Ellipteroides*) *lateralis* (Macquart, 1835)

Erioconopa diuturna (Walker, 1848)

Erioconopa trivialis (Meigen, 1818)

Erioptera (*Erioptera*) *flavata* (Westhoff, 1882)

Erioptera (*Erioptera*) *fuscipennis* Meigen, 1818

Erioptera (*Erioptera*) *griseipennis* Meigen, 1838

Erioptera (*Erioptera*) *lutea* Meigen, 1804
Erioptera (*Erioptera*) *meijerei* Edwards, 1921
Erioptera (*Erioptera*) *nielseni* de Meijere, 1921
Erioptera (*Erioptera*) *squalida* Loew, 1871
Gonempeda flava (Schummel, 1829)
Gonomyia (*Gonomyia*) *bifida* Tonnoir, 1920
Gonomyia (*Gonomyia*) *conoviensis* Barnes, 1924
Gonomyia (*Gonomyia*) *dentata* de Meijere, 1920
Gonomyia (*Gonomyia*) *lucidula* de Meijere, 1920
Gonomyia (*Gonomyia*) *simplex* Tonnoir, 1920
Gonomyia (*Gonomyia*) *tenella* (Meigen, 1818)
Hoplolabis (*Parilisia*) *areolata* (Siebke, 1873)
Hoplolabis (*Parilisia*) *vicina* (Tonnoir, 1920)
Hoplolabis (*Parilisia*) *yezoana* (Alexander, 1924)
Ilisia maculata (Meigen 1804)
•*Ilisia occoecata* Edwards, 1936
Molophilus appendiculatus (Staeger, 1840)
Molophilus ater (Meigen, 1804)
Molophilus bifidus Goetghebuer, 1920
Molophilus bihamatus de Meijere, 1918
Molophilus cinereifrons de Meijere, 1920
Molophilus crassipygus de Meijere, 1918
•*Molophilus curvatus* Tonnoir, 1920
Molophilus czizeki Lackschewitz, 1931
Molophilus flavus Goetghebuer, 1920
Molophilus griseus (Meigen, 1804)
Molophilus lackschewitzianus Alexander, 1952
Molophilus medius de Meijere, 1918

Molophilus obscurus (Meigen, 1818)

Molophilus occultus de Meijere, 1918

Molophilus ochraceus (Meigen, 1818)

Molophilus pleuralis de Meijere, 1918

Molophilus propinquus (Egger, 1863)

Molophilus pusillus Edwards, 1921

Molophilus serpentiger Edwards, 1938

Neolimnophila carteri (Tonnoir, 1921)

Ormosia (*Ormosia*) *albitibia* Edwards, 1921

Ormosia (*Ormosia*) *depilata* Edwards, 1938

Ormosia (*Ormosia*) *hederae* (Curtis, 1835)

Ormosia (*Ormosia*) *lineata* (Meigen, 1804)

Ormosia (*Ormosia*) *nodulosa* (Macquart, 1826)

Ormosia (*Ormosia*) *pseudosimilis* (Lundström, 1912)

•*Rhypholophus bifurcatus* Goetghebuer, 1920

Rhypholophus varius (Meigen, 1818)

•*Scleroprocta sororcula* (Zetterstedt, 1851)

Symplecta (*Psiloconopa*) *stictica* (Meigen, 1818)

Symplecta (*Symplecta*) *hybrida* (Meigen, 1804)

Tasiocera (*Dasymophilus*) *collini* Freeman, 1951

Tasiocera (*Dasymophilus*) *fuscescens* (Lackschewitz, 1940)

Tasiocera (*Dasymophilus*) *murina* (Meigen, 1818)

Trimicra pilipes (Fabricius, 1787)

SUBFAMILY CHIONEINAE

***Cheilotrichia* (*Cheilotrichia*) *imbuta* (Meigen, 1818)**

First recorded as new to Ireland in Ashe *et al*. (1991).

CARLOW: 17.vi.1991, St Mullins S7238 (PU.2), JPOC; **CORK**: 4.vii.1969, Glengarriff State Forest (MT.4), PJC (Ashe *et al*., 1991); **MEATH**: 30.v.1988, River Boyne N8768 (PV.4),

JPOC (Ashe *et al*., 1991).

***Cheilotrichia* (*Empeda*) *cinerascens* (Meigen, 1804)**

There are records in Mendl (1987) from Counties Cork, Donegal, Galway, Kerry, Mayo, Sligo and Waterford.

ANTRIM: 5.ix.1974, Ardmore Point, Lough Neagh J0979 (PA.3), AGI; 16.v.1975, Barnett's Park J3268 (UF.2), AGI; 16.v.1975, Dixon Park J3067 (UF.2), AGI; 19.v.1975, Bartin's Bay, Lough Neagh J0765 (PA.4), AGI; 24.v.1975, Portglenone Forest C9802 (PA.3), AGI; 24.v.1975, Glarryford Bog, near Clogh Mills D0515 (PA.3), AGI; 24.v.1975, Garron Wood D2922 (UG.2), AGI; **CARLOW**: 24.vii.1975, Graiguealug S766715 (PU.1), AES; 21.iv.1987, Cloughristick S7069 (PU.2), JPOC; **CAVAN**: 28.vi.1975, near Lough Ramor N5-8- (PV.1), PJC; 15.v.1989, Virginia Woods N5987 (PV.1), JPOC; **CLARE**: 19.v.1970, Ennistymon (MU.3), PJC; 22.v.1970, Burren, track up to Oughtmama churches (MU.3), PJC; 25.v.1992, Lisdoonvarna Spa R1397 (MU.3), JMOC; **CORK**: 19-20.vi.1970, Glengarriff State Forest V9157 (MT.4), RIVW; **DUBLIN**: 1.xi.1981, Slade of Saggart O033245 (PV.4), JMOC; 18.v.1991, Naul O1461 (PV.4), JPOC; **FERMANAGH**: 28.v.1992, Reilly Wood, Crom Castle Estate H340255 (NA.4), KNAA; **GALWAY**: 23.v.1974, Barna M2-2- (MV.4), KCS; 22.ix.-3.x.1974, Roundstone (MV.2), PO; **KERRY**: 19.vii.1975, Headley Bridge, Abbeyfeale R074194 (MT.3), AES; 6.ix.1982, Blennerville, near Tralee Q815135 (MT.1), EGH (Hancock, 1990); 8.ix.1982, Ardfert Q7821 (MT.1), EGH (Hancock, 1990); 14.ix.1982, near Dreenagh Q715320 (MU.2), EGH (Hancock, 1990); **KILDARE**: 4.vi.1970, Lullybeg, rank vegetation by lake, 250' N710240 (PV.2), RIVW; 11.v.1982, Grand Canal N9427 (PV.4), JPOC; 8.ix.1991, Newbridge Fen N7616 (PU.1), JMOC; **LOUTH**: 29.vi.1975, Killin Park J0-0- (PV.3), PJC; **MAYO**: no date [1909-1911], 30.vi.1911, Westport, garden (MV.3), PHG (Grimshaw, 1912, sub *Empeda nubila* Schum.); 25-27.ix.1974, Cong (MV.4), PO; 29.ix.1977, Westport Demesne L9-8- (MV.3), PJC; 30.ix.1977, Rosserk Friary G2-2- (MA.4), PJC; **MEATH**: 27.v.1990, 19.v.1991, Kilmessan N8857 (PV.4), JMOC; 7.v.1991, Batterjohn Big N8953 (PV.4), JPOC; **MONAGHAN**: 29.vi.1975, near Lough Fea H8-0- (PV.1), PJC; **OFFALY**: 30.iv.1984, Clara Bog N265295 (NV.4), JPOC; **ROSCOMMON**: 28.ix.1977, Castlerea M6-8- (NV.1), PJC;

SLIGO: 1.x.1977, Ballinacarrow G6-1- (NV.1), PJC; **WATERFORD**: 29.vi.1988, Dunhill S5304 (PT.1), JPOC; **WESTMEATH**: 5.v.1987, Ballynafid Lake N409608 (PV.2), JPOC; 30.v.1990, Derravaragh Lough N4762 (PV.2), JPOC; 28.viii.1990, Belvidere House N4247 (PV.2), JMOC; **WEXFORD**: 19.iv.1987, Ferrycarrig T0122 (PT.3), JPOC; 8.vi.1991, Coolbawn House S8337 (PU.4), JMOC; 12.vii.1991, Ballylane, New Ross S7324 (PU.2), JPOC; **WICKLOW**: 15.ix.1968, Blessington, shore of Lacken Reservoir (PU.3), PJC; 16.ix.1968, Glendalough, by Rí Fearta Church T1296 (PU.3), PJC; 17.ix.1968, Blessington, on road L181 (PU.3), PJC; iv.-viii.1988, Blackditch Wood O3103 (PU.3), REB/RMB, Malaise trap sample (Blackith *et al*., 1991 sub *Platytoma*); iv.1988, Killoughter Marsh Field T3199 (PU.3), REB/RMB (Blackith *et al*., 1991 sub *Platytoma cinerascens*).

***Crypteria limnophiloides* Bergroth, 1913**

Recorded by Mendl (1987) from a single locality in County Wicklow.

KERRY: 15.x.1973, Dromore Forest (MT.2), PJC; 15.x.1973, near Kenmare (MT.4), PJC; 16.x.1973, Muckross Abbey Woods (MT.3), PJC; **KILDARE**: 18.x.1973, Ardscull Mote (PU.1), PJC; **MAYO**: 29.ix.1977, Westport Demesne L9-8- (MV.3), PJC; **WICKLOW**: 15.ix.1968, Rathdrum Forest (PU.3), PJC.

***Ellipteroides* (*Ellipteroides*) *lateralis* (Macquart, 1835)**

This species is recorded in Walker (1856: 304) as "Not common. (E. I.)" where the "I" is an abbreviation for Ireland. The Irish record, assuming that it is not an error, would be based on material collected by Haliday. However, there is no surviving Haliday material of this species in the National Museum of Ireland, the Irish locality is not specified and the species is not listed in Haliday's ms 'Catalogue of Irish insects'.

The record below from Kilmacanogue Marsh is the only confirmed Irish record. At Kilmacanogue, in June 1991, the species was very abundant in a wet marshy field.

WICKLOW: 20.vi.1991, Kilmacanogue Marsh O2513 (PU.3), PA.

***Erioconopa diuturna* (Walker, 1848)**

In Mendl (1987), it is recorded from Counties Galway and Kerry.

ANTRIM: 28.viii.1998, Aird, Causeway Coast C9544 (PB.4), KNAA; 27.viii.1998, eastern

rises, Ballyconagan, Rathlin Island D152518 (PB.4), KNAA; 27.viii.1998, Portnacool Mire, Rathlin Island D147522 (PB.4), KNAA; 27.viii.1998, Upper Portnacooly Pond, Rathlin Island D145522 (PB.4), KNAA; **CLARE**: 18.v.1970, Cratloe Wood (NU.2), PJC; 20.v.1970, Killone Abbey, lane by lake (MU.4), PJC; **ROSCOMMON**: 11.v.1970, Lough Key National Forest Park (NV.1), PJC; **SLIGO**: 13.v.1970, Ballysadare Bay G6-3- (NA.2), PJC; **WICKLOW**: 17.ix.1968, Glenmacnass, near waterfall (PU.3), PJC.

***Erioconopa trivialis* Meigen, 1818**

Mendl (1987) recorded the species from nine counties including Clare, Cork, Donegal, Galway, Kerry, Mayo, Sligo, Waterford and Wicklow.

ANTRIM: 9-12.vi.1842, "At Colin [= Collin] Glen, about four miles west of Belfast" (PA.3), RP (Patterson, 1842 sub *Erioptera*); 11.vi.1842, "north side of the bay [= Belfast Lough], and about half a mile from the town" of Belfast (UF.1), RP (Patterson, 1842 sub *Erioptera*); 14.vi.1842, Belfast (UF.1), RP (Patterson, 1842 sub *Erioptera*); 16.v.1975, Barnett's Park J3268 (UF.2), AGI; 16.v.1975, Dixon Park J3067 (UF.2), AGI; 24.v.1975, Slievenance, near Trostan D1621 (PB.4), AGI; 24.v.1975, Pollan Bridge, Trostan D1524 (PB.4), AGI; 24.v.1975, Glarryford Bog, near Clogh Mills D0515 (PA.3), AGI; 30.vi.1975, Masserene, Lough Neagh J1-8- (PA.3), PJC; **CAVAN**: 2.x.1989, Virginia Woods N5987 (PV.1), JMOC; **CLARE**: 18.v.1970, Cratloe Wood (NU.2), PJC; 20.v.1970, Killone Abbey, lane by lake (MU.4), PJC; 20.v.1974, Ballyvaughan M1-0- (MU.3), KCS; 26.v.1975, Lough Bunny R3695 (NU.1), AGI; 3.vii.1975, Knockauns Mountain, Burren M1203 (MU.3), AGI; 23.vii.1975, Bridget Lake, Tulla R556810 (NU.1), AES; 28.v.1984, 21.v.1985, Lough Bunny R3696 (NU.1), JMOC; 22.v.1985, Cooleabeg M163020 (MU.3), JMOC; 25.v.1992, Lisdoonvarna Spa R1397 (MU.3), JMOC; **CORK**: 29.v.1974, League Point V9-4- (MT.4), KCS; 29.v.1974, Dromnea V8-3- (MT.4), KCS; 24.v.1994, Three Castle Head V7227 (MT.2), KNAA; **DONEGAL**: no date [?1970's], Carrigan Head, Slieve League G5575 (NA.1), AGI; **DOWN**: 18.viii.1974, Ballygowan J4163 (UF.2), AGI; 23.iv.1975, Minnowburn J3268 (UF.2), AGI; 18.v.1975, Ballygowan Wood J4163 (UF.2), AGI; l9.viii.1998, Inisharoan Island, Strangford Lough J543615 (UF.2), KNAA; 17.viii.1998, South Island, Strangford Lough J5666 (UF.2), KNAA;

FERMANAGH: 2.ix.1998, Florence Court H175344 (NA.4), KNAA; **GALWAY**: 23.v.1974, Maam L9-5- (MV.4), KCS; 22.ix.-3.x.1974, Roundstone (MV.2), PO; 22.ix.-3.x.1974, Letterdyfe House, Roundstone (MV.2), PO; 24.ix.-2.x.1974, Recess (MV.4), PO; **KERRY**: viii.1940, Killarney (MT.3), BPB; 12.vi.1970, Lough Gal, 400' Q476068 (MT.1), RIVW; 16.vi.1970, Lough Accose V750850 (MT.1), RIVW; 15.x.1973, west side of Kenmare V8-7- (MT.4), PJC; 26.v.1974, Connor Pass Q5-0- (MT.1), KCS; 3.ix.1982, near Ballyheige Q7626 (MU.2), EGH (Hancock, 1990); 6.ix.1982, Blennerville, near Tralee Q815135 (MT.1), EGH (Hancock, 1990); 8.ix.1982, Ardfert Q7821 (MT.1), EGH (Hancock, 1990); 9.ix.1982, Shevanea Q5005 (MT.1), EGH (Hancock, 1990); 13.ix.1982, Loch Slat Q601080 (MT.1), EGH (Hancock, 1990); 14.ix.1982, near Dreenagh Q715320 (MU.2), EGH (Hancock, 1990); 26.v.1994, Tomies Wood, Killarney V9188 (MT.3), KNAA; **KILDARE**: 5.vi.1970, Clogheen, boggy pasture, 250' N620153 (PU.1), RIVW; 12.iv.1982, Newbridge Fen N767116 (PU.1), JMOC; 12.ix.1982, Grand Canal N933263 (PV.4), JMOC; 11.ix.1985, Newbridge Fen N767116 (PU.1), JPOC; **LEITRIM**: 2.x.1977, Glencar G7-4- (NA.2), PJC; **MAYO**: 9.vi.1909, Clare Island (MV.1), JNH and PHG (Grimshaw, 1912 sub *Erioptera*); iv.1970-vi.1972, Glenamoy F877334 (MA.4), EFO, larvae in peat soil of grassland planted on reclaimed blanket bog (Okely, 1979); 25-27.ix.1974, Cong (MV.4), PO; 30.ix.1977, Lough Conn, north of Pontoon G1-0- (MV.3), PJC; 30.v.1994, Old Head L8383 (MV.1), KNAA; **MEATH**: 7.v.1991, Batterjohn Big N8953 (PV.4), JPOC; **MONAGHAN**: 20.v.1976, Carrickmacross H8-0- (PV.1), JHC; 21.v.1976, Lough Egish (PV.1), JHC; **OFFALY**: 5.vi.1970, near Bracknagh, *Iris* filled dyke N612173 (PU.1), RIVW; 30.iv.1984, Clara Bog N265295 (NV.4), JPOC; **ROSCOMMON**: 11.v.1970, Drumnone Dolmen (NV.1), PJC; 14.v.1970, Lough Ree (NV.4), PJC; 28.ix.1977, Lough Ree N0-4- (NV.4), PJC; **SLIGO**: 1.x.1977, Ballinacarrow G6-1- (NV.1), PJC; **WESTMEATH**: 7.v.1988, Glen Lough (NV.4), PJC; **WEXFORD**: 25.v.1987, Lady's Island Lake T104071 (PT.3), JPOC; 28.v.1987, Curracloe T1127 (PU.4), JPOC; **WICKLOW**: 15.ix.1968, Blessington, shore of Lacken Reservoir (PU.3), PJC; 16.ix.1968, near Poll an Easa Waterfall, Glendalough T1195 (PU.3), PJC; 18.ix.1968, near Redcross (PU.3), PJC; 18.ix.1968, by stream alongside Lough Dan (PU.3), PJC; 3.vi.1970, near Kippure Bog,

1,750' 0140140 (PU.3), RIVW; 3.vi.1974, Arklow T2-7- (PU.3), KCS; 4.vi.1974, Newcastle O3-0- (PU.3), KCS; v.1988, Blackditch Wood O3103 (PU.3), REB/RMB (Blackith *et al*., 1991 sub *Erioptera*); iv.-x.1988, Killoughter Marsh Field T3199 (PU.3), REB/RMB (Blackith *et al*., 1991 sub *Erioptera*); vi.-x.1988, Killoughter, "soak" opposite old Station House T3199 (PU.3), REB/RMB (Blackith *et al*., 1991 sub *Erioptera*); v.1988, Clonmannon Wood T3098 (PU.3), REB/RMB, bred from rotten potatoes (Blackith and Blackith, 1989; Blackith *et al*., 1991 sub *Erioptera*).

***Erioptera* (*Erioptera*) *flavata* (Westhoff, 1882)**

Recorded from Ireland in the Clare Island Survey (Grimshaw, 1912) under the name "*flavescens* L." which is based on Meigen's misidentification of Linnaeus's species - the true *flavescens* Linnaeus is a *Nephrotoma* species (Family Tipulidae).

In Mendl (1987), there are records from Counties Galway and Kerry published under the name *gemina* Tjeder, a junior synonym.

ANTRIM: 26.viii.1998, Ballyconagan area of Rathlin Island, south-west wetlands D143517 (PB.4), KNAA; 27.viii.1998, Upper Portnacooly Pond, Rathlin Island D145522 (PB.4), KNAA; **CORK**: 4.vii.1969, Glengarriff State Forest (MT.4), PJC; 16.vii.1975, Ahane W224942 (MT.3), AES; **KERRY**: vii.1943, Killarney (MT.3), BPB; 30.vi.1969, Killarney, Ross Island (MT.3), PJC; **MAYO**: vii.1910, Belclare (MV.3), JNH (Grimshaw, 1912, sub "*flavescens* L."; Edwards, 1938, "Ireland); no date [1909-1911], 3.vii.1911, Knappagh (MV.3), PHG (Grimshaw, 1912, sub "*flavescens* L."; Edwards, 1938, "Ireland); **MONAGHAN**: 15.vii.1971, near Lough Muckno (PV.1), PJC; **TIPPERARY**: 15.vii.1975, north-west of Caher S030275 (NU.4), AES; **WATERFORD**: 19.vii.1987, 19.vi.1991, Ballin Lough S4403 (PT.1), JPOC; 29.vi.1988, Dunhill S5304 (PT.1), JPOC; **WEXFORD**: 25.vii.1970, Cahore T2244 (PU.4), RIVW.

***Erioptera* (*Erioptera*) *fuscipennis* Meigen, 1818**

In Mendl (1987), the records of this species from Counties Clare, Cork, Down, Galway, Kerry, Mayo and Wicklow are listed under the name "*fuscescens* Meigen" which is a typing error for *fuscipennis* Meigen. In Table 1 (Mendl, *op. cit.*), which summarises the county

distribution, the name is correctly given as *fuscipennis*.

ANTRIM: 24.v.1975, Glarryford Bog, near Clogh Mills D0515 (PA.3), AGI; 27.viii.1998, Ballycarry Field Pond, Ballconagan, Rathlin Island D152516 (PB.4), KNAA; 22.vi.1992, Ballykeel, Islandmagee J484962 (UF.1), KNAA; 24.vi.1992, Cushleake Mountain D2334 (PB.4), KNAA; **CARLOW**: 24.vii.1975, Graiguealug S766715 (PU.1), AES; 17.vi.1991, St Mullins S7238 (PU.2), JPOC; 1.vii.1991, St Mullins S7238 (PU.2), JMOC; **CLARE**: 20.v.1970, above Lough Inchiquin (MU.3), PJC; 3.vii.1975, Knockauns Mountain, Burren M1203 (MU.3), AGI; 4.vii.1975, Liscannor R0889 (MU.3), AGI; 23.vii.1975, Bridget Lake, Tulla R556810 (NU.1), AES; 31.vii.1988, Fanore M1308 (MU.3), JPOC; **CORK**: 29.v.1975, League Point V9-4- (MT.4), KCS; 30.v.1974, Bealad W3-4- (NT.2), KCS; **DERRY**: 10.vi.1992, Grangemore C811353 (PB.2), KNAA; **DONEGAL**: no date [1970's], Carrigan Head, Slieve League G5575 (NA.1), AGI; 12-15.vi.1990, Sheskinmor G6995 (NA.1), MCDS; 7.vi.1999, St John's Point G7068 (NA.2), KNAA; **DOWN**: 18.viii.1974, Ballygowan J4163 (UF.2), AGI; 29.vi.1992, Orlock Point J558838 (UF.1), KNAA; **DUBLIN**: 25.x.1987, Howth O2938 (PV.4), JPOC; **FERMANAGH**: 2.ix.1998, Florence Court H175344 (NA.4), KNAA; **GALWAY**: 22.ix.-3.x.1974, Roundstone (MV.2), PO; **KERRY**: 28.vi.1969, Caherdean, by River Gweestin (MT.3), PJC; 29.vi.1969, Glenflesk (MT.3), PJC; 3.vii.1969, woods above Lough Isknagahiny (MT.2), PJC; 4.vii.1969, McGillycuddy's Reeks, by Gaddagh River (MT.3), PJC; 16.vi.1970, Lough Accose V750850 (MT.1), RIVW; 13.ix.1982, Loch Slat Q601080 (MT.1), EGH (Hancock, 1990); 14.ix.1982, near Dreenagh Q715320 (MU.2), EGH (Hancock, 1990); **KILDARE**: 4.vi.1970, Lullybeg, rank vegetation by lake, 250' N710240 (PV.2), RIVW; 5.vi.1970, Clogheen, boggy pasture, 250' N620153 (PU.1), RIVW; **KILKENNY**: 2.vi.1974, south of New Ross S6-2- (PU.2), KCS; 15.vii.1975, Rosbercon S717280 (PU.2), AES; **MAYO**: 9.vi.1909, vii.1910, viii.1910, Clare Island (MV.1), JNH/PHG (Grimshaw, 1912); no date [1909-1911], lough near Westport (MV.3), PHG (Grimshaw, 1912); no date [1909-1911], 5.vii.1911, Belclare (MV.3), PHG (Grimshaw, 1912); no date [1909-1911], Clogher (MV.3), PHG (Grimshaw, 1912); **OFFALY**: 10-12.viii.1991, 18-20.viii.1991, Little Brosna callows, in Malaise trap M9910 (NU.3), MCDS; **ROSCOMMON**: 14.v.1970,

Lough Ree (NV.4), PJC; **TIPPERARY**: 15.vii.1975, north-west of Caher S030275 (NU.4), AES; **WATERFORD**: 15.vii.1975, Carrickbeg S404216 (PT.1), AES; 24.vii.1987, Woodstock House, Inistioge S6336 (PU.2), JPOC; **WESTMEATH**: 7.v.1988, Glen Lough (NV.4), PJC; **WEXFORD**: 25.vii.1970, Cahore T2244 (PU.4), RIVW; 27.viii.1980, Carnsore Point T121038 (PT.3), JPOC; **WICKLOW**: 24.v.1970, Glendalough, above Lugduff Brook (PU.3), PJC; 3.vi.1970, near Kippure Bog, 1,750' 0140140 (PU.3), RIVW; iv.-ix.1988, Blackditch Wood O3103 (PU.3), REB/RMB, Malaise trap sample (Blackith *et al*., 1991); iv.1988, Killoughter Marsh Field T3199 (PU.3), REB/RMB (Blackith *et al*., 1991); 28.v.1989, Knocksink Wood O2117 (PU.3), JPOC.

***Erioptera* (*Erioptera*) *griseipennis* Meigen, 1838**

Recently recorded as new to Ireland in Ashe and O'Connor (2005).

ANTRIM: 8.vi.1992, Port na Spaniagh, Causeway Coast, C9545 (PB.4), KNAA; **MEATH**: 19.v.1991, along the disused railway line between Dublin and Navan at Kilmessan N8857 (PV.4), JMOC (Ashe and O'Connor, 2005); **WICKLOW**: 27.v.1991, beside the River Vartry, at Mount Usher, Ashford T2796 (PU.3), JMOC (Ashe and O'Connor, 2005).

***Erioptera* (*Erioptera*) *lutea* Meigen, 1804**

In Mendl (1987), there are records of this species from Counties Clare, Cork, Donegal, Galway, Kerry, Mayo, Meath, Sligo and Wicklow.

Edwards (1938: 124) includes Ireland in the distribution data for *lutea* but no Irish specimens which pre-date the 1938 paper have been found in the Natural History Museum, London. The relevant specimens are probably in another museum collection in England or Scotland.

ANTRIM: 16.v.1975, Barnett's Park J3268 (UF.2), AGI; 16.v.1975, Dixon Park J3067 (UF.2), AGI; 24.v.1975, Glarryford Bog, near Clogh Mills D0515 (PA.3), AGI; 2.x.1977, Barnett's Park, Belfast J3-7- (UF.2), PJC; 22.viii.1998, Manor House Bank, Rathlin Island D145512 (PB.4), KNAA; **CARLOW**: 24.vii.1975, Graiguealug S766715 (PU.1), AES; 15.iv.1990, Altamont Gardens S8665 (PU.4), JPOC; **CAVAN**: 15.v.1989, Virginia Woods N5987 (PV.1), JPOC; **CLARE**: 18.v.1970, Cratloe Wood (NU.2), PJC; 18.v.1970, shore of Lough Derg

(NU.1), PJC; 19.v.1970, Ennistymon (MU.3), PJC; 20.v.1970, above Lough Inchiquin (MU.3), PJC; 7-8.vi.1970, near Caher River, Burren M1704 (MU.3), RIVW; 26.v.1975, Lough Bunny R3695 (NU.1), AGI; 3.vii.1975, Knockauns Mountain, Burren M1203 (MU.3), AGI; 23.vii.1975, Bridget Lake, Tulla R556810 (NU.1), AES; 22.v.1985, Cooleabeg M163020 (MU.3), JMOC; 31.vii.1988, Fanore M1308 (MU.3), JPOC; 25.v.1992, Lisdoonvarna Spa R1397 (MU.3), JMOC; **CORK**: 28.vi.1969, Tobar Ghobnatan, near Ballyvourney (MT.3), PJC; 19-20.vi.1970, Glengarriff State Forest V9157 (MT.4), RIVW; 30.v.1974, Bealad W3-4- (NT.2), KCS; 16.vii.1975, Kildorrery R723106 (NT.1), AES; 16.vii.1975, Mallow W550980 (NT.1), AES; **DOWN**: 18.viii.1974, Ballygowan J4163 (UF.2), AGI; 23.iv.1975, Minnowburn J3268 (UF.2), AGI; 18.v.1975, Ballygowan Wood J4163 (UF.2), AGI; **DUBLIN**: 12.vi.1953, Howth (PV.4), RLC; 27.vi.1975, Howth Woods, Dublin O2-3- (PV.4), PJC; 6.x.1985, Malahide Castle O2245 (PV.4), JMOC; 18.v.1991, Naul O1461 (PV.4), JPOC; **FERMANAGH**: 2.ix.1998, Florence Court H175344 (NA.4), KNAA; **GALWAY**: 22.ix.-3.x.1974, Roundstone (MV.2), PO; 22.ix.-3.x.1974, Letterdyfe House, Roundstone (MV.2), PO; 24.ix.-2.x.1974, Recess (MV.4), PO; **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE; vii.1943, Killarney (MT.3), BPB (Beirne, 1951 sub *lutea* Meig. var. *taenionata* Meig.); 15.x.1973, west side of Kenmare V8-7- (MT.4), PJC; 19.vii.1975, Headley Bridge, Abbeyfeale R074194 (MT.3), AES; 8.ix.1982, Ardfert Q7821 (MT.1), EGH (Hancock, 1990); 9.ix.1982, Shevanea Q5005 (MT.1), EGH (Hancock, 1990); 13.ix.1982, Loch Slat Q601080 (MT.1), EGH (Hancock, 1990); **KILDARE**: 4.vi.1970, Lullybeg, rank vegetation by lake, 250' N710240 (PV.2), RIVW; 5.vi.1970, Clogheen, boggy pasture, 250' N620153 (PU.1), RIVW; **LIMERICK**: 7.vii.1981, Lough Gur R627414 (NU.2), JPOC; **LOUTH**: 29.vi.1975, Ballymascanlon Swamp J0-1- (PV.3), PJC; 29.vi.1975, Thomastown N9-9- (PV.3), PJC; **MAYO**: 25-27.ix.1974, Cong (MV.4), PO; 29.ix.1977, Westport Demesne L9-8- (MV.3), PJC; **OFFALY**: 30.iv.1984, Clara Bog N265295 (NV.4), JPOC; 8.ix.1988, All Saints Bog N0010 (NU.3), REB/RMB (Speight, 1990); **ROSCOMMON**: 28.ix.1977, Castlerea M6-8- (NV.1), PJC; **SLIGO**: 1.x.1977, Collooney G6-2- (NA.2), PJC; 1.x.1977, Ballinacarrow G6-1- (NV.1), PJC; **TIPPERARY**: 22.vi.1975, wildlife sanctuary, near Dundrum R9-4- (NU.4), PJC; 15.vii.1975, north-west of

Caher S030275 (NU.4), AES; **TYRONE**: 22.v.1975, Washing Bay, Lough Neagh H9066 (PA.4), AGI; **WATERFORD**: 15.vii.1975, Carrickbeg S404216 (PT.1), AES; 18.vii.1987, Knockaderry Reserve S4905 (PT.1), JPOC; **WEXFORD**: 15.vii.1975, near Newbawn S856244 (PU.4), AES; 27.viii.1980, Carnsore Point T121038 (PT.3), JPOC; 3.ix.1980, 5.ix.1980, Stoneyford T105098 (PT.3), JMOC; 2.vi.1986, Ferrycarrig T005228 (PT.3), JPOC; 7.vi.1986, Oaklands S715255 (PU.2), JMOC; 27.v.1987, Killoughrim Forest Park S8941 (PU.4), JPOC; 28.iii.1989, Tintern S7810 (PT.1), JPOC; **WICKLOW**: 24.vi.1975, Glendalough T1-9- (PU.3), PJC; 26.vi.1975, Bellevue Woods, Glen of the Downs O2-1- (PU.3), PJC; 9.vi.1992, River Slaney, above Baltinglass S8689 (PU.3), PA.

***Erioptera* (*Erioptera*) *meijerei* Edwards, 1921**

This vulnerable red data book species was collected in a Malaise trap which operated continuously for a month (Ashe and O'Connor, 2001). The Malaise trap was located under a birch (*Betula*) tree surrounded on all sides by high stands of common reed (*Phragmites australis*) close to a freshwater drainage channel.

WICKLOW: 24.vi.- 25.vii.1999, at Clonmannon, The Murrough T304982 (PU.3), PA (Ashe and O'Connor, 2001).

***Erioptera* (*Erioptera*) *nielseni* de Meijere, 1921**

Recorded as new to Ireland in Ashe *et al.* (1991) based on the three records detailed below. A notable red data book species usually associated with mildly acidic bogs (Falk, 1991) with base-rich flushing.

KERRY: 17.vii.1975, Clonee Loughs, south-west of Kenmare V8264 (MT.4), AES (Ashe *et al.*, 1991); 17.vii.1975, south of Killarney V932826 (MT.3), AES (Ashe *et al.*, 1991); 18.vii.1975, Knockeirka V947666 (MT.4), AES (Ashe *et al.*, 1991).

***Erioptera* (*Erioptera*) *squalida* Loew, 1871**

First recorded from Ireland in Ashe *et al.* (1991) based on the record from County Wexford. It is a species which favours areas of emergent vegetation in ponds, lakes and canals.

DONEGAL: 12-15.vi.1990, Sheskinmor G6995 (NA.1), MCDS; **LIMERICK**: 7.vii.1981, Lough Gur R6241 (NU.2), JPOC; **WEXFORD**: 25.vii.1970, Cahore T2244 (PU.4), RIVW

(Ashe *et al*., 1991).

***Gonempeda flava* (Schummel, 1829)**

Recorded by Mendl (1987) from two localities in County Kerry.

DUBLIN: 27.vi.1975, Howth Woods, Dublin O2-3- (PV.4), PJC; **LOUTH**: 29.vi.1975, Thomastown N9-9- (PV.3), PJC; 18.vi.1992, Flurry River, Ballymacscanlan J0819 (PV.3), PA; **KILDARE**: 6.vi.1991, Louisa Bridge N995368 (PV.4), PA; **OFFALY**: 15.vi.1985, Charleville Woods (NV.4), PJC; **TIPPERARY**: 21.vi.1975, Cregg S4-2- (PU.2), PJC; **WEXFORD**: 15.vii.1975, near Newbawn S856244 (PU.4), AES; **WICKLOW**: 27.v.1991, beside the River Vartry, at Mount Usher, Ashford T2796 (PU.3), JMOC.

***Gonomyia* (*Gonomyia*) *bifida* Tonnoir, 1920**

Recorded as new to Ireland in Ashe *et al*. (1991) based on the three records detailed below. In Britain, it is a scarce southern species mostly associated with fens.

CLARE: 23.vii.1975, Bridget Lake, Tulla R556810 (NU.1), AES (Ashe *et al*., 1991); **LOUTH**: 29.vi.1975, Thomastown N9-9- (PV.3), PJC (Ashe *et al.*, 1991).

***Gonomyia* (*Gonomyia*) *conoviensis* Barnes, 1924**

In Mendl (1987), there are records from Counties Cork, Galway, Kerry, Mayo, Sligo and Wicklow.

CLARE: 25.v.1992, Lisdoonvarna Spa R1397 (MU.3), JMOC; **ROSCOMMON**: 28.ix.1977, Lough Key Forest Park G8-0- (NV.1), PJC.

***Gonomyia* (*Gonomyia*) *dentata* de Meijere, 1920**

Recorded by Mendl (1987) from Counties Clare, Cork, Donegal, Galway, Kerry, Mayo and Wicklow.

The single male Clare Island specimen, identified as *tenella* (Meigen) in Grimshaw (1912), was re-identified in 1971 by R. I. Vane-Wright as belonging to the species *dentata*. There is also a female Clare Island specimen which we consider is most likely a specimen of *dentata* because it has identical contemporary labels to that of the male specimen. In the National Museums of Scotand (Edinburgh), there is a male Grimshaw specimen from Clare Island which is now included under *dentata* which was presumably also misidentified as *tenella*. No Clare

Island Survey material from the other Mayo localities has been located but until all the material can be checked we are including all these records under *dentata*.

ANTRIM: 24.v.1975, Glarryford Bog, near Clogh Mills D0515 (PA.3), AGI; **CLARE**: 7.vi.1970, Lough Atorick, 460' R635960 (NU.1), RIVW; 20.v.1974, Ballyvaughan M1-0- (MU.3), KCS; 3.vii.1975, Knockauns Mountain, Burren M1203 (MU.3), AGI; **GALWAY**: 22.ix.-3.x.1974, Letterdyfe House, Roundstone (MV.2), PO; 22.ix.-3.x.1974, Roundstone (MV.2), PO; 24.ix.1974, near Roundstone (MV.2), MD; 24.ix.-2.x.1974, Recess (MV.4), PO; 24.ix.-2.x.1974, "Joices [= Joyce's] River" (MV.4), MD; 5.vii.1975, Lough Aughawoolia, Glentrasna L9741 (MV.4), AGI; 3.vi.1994, Ballynahinch Woods L7648 (MV.2), KNAA; **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE (Edwards, 1938, "Kerry"); 16.x.1973, Muckross Abbey Woods (MT.3), PJC; **MAYO**: vii.1910, Clare Island (MV.1), PHG (Grimshaw, 1912 sub *tenella*); no date [1909-1911], Castlebar Lough (MV.3), PHG (Grimshaw, 1912 sub *tenella*); no date [1909-1911], Belclare (MV.3), PHG (Grimshaw, 1912 sub *tenella*); no date [1909-1911], Clogher (MV.3), PHG (Grimshaw, 1912 sub *tenella*); 29.ix.1977, Westport Demesne L9-8- (MV.3), PJC; **WICKLOW**: vi.1940, Enniskerry (PU.3), BPB (Beirne, 1951); 3.vi.1970, near Kippure Bog, 1,750' O140140 (PU.3), RIVW.

***Gonomyia* (*Gonomyia*) *lucidula* de Meijere, 1920**

There are records in Mendl (1987) from Counties Galway and Kerry.

ANTRIM: 15.vi.1992, Drumnakil, Murlough Bay D192425 (PB.4), KNAA; 15.vi.1992, Murlough Bay, D2041 (PB.4), KNAA; **KERRY**: 29.vi.1969, Glenflesk (MT.3), PJC; 30.vi.1969, Torc Cascade (MT.3), PJC; 26.v.1974, Connor Pass Q5-0- (MT.1), KCS; 16.vii.1975, 1 mile east of Barraduff W102911 (MT.3), AES; 17.vii.1975, Muckross Lake, Killarney V966846 (MT.3), AES; 19.vii.1975, Headley Bridge, Abbeyfeale R074194 (MT.3), AES; **LOUTH**: 29.vi.1975, Thomastown N9-9- (PV.3), PJC; **WATERFORD**: 15.vii.1975, Carrickbeg S404216 (PT.1), AES; **WICKLOW**: 25.vi.1975, Powerscourt Deer Park O1-1- (PU.3), PJC.

***Gonomyia* (*Gonomyia*) *simplex* Tonnoir, 1920**

Recorded from Counties Donegal and Galway by Mendl (1987).

CLARE: 22.v.1970, Lisdoonvarna R1397 (MU.3), PJC; **LEITRIM**: 15.v.1970, Glencar, near waterfall (NA.2), PJC.

***Gonomyia* (*Gonomyia*) *tenella* (Meigen, 1818)**

The records of *tenella* in Haliday (1833) from Holywood (County Down) and in Yerbury (1902) from Glengarriff (County Cork, collected on the 15th June 1901) are considered doubtful since it is a scarce species. They are more likely to be specimens of *dentata*, which is a common species, but further investigation is required.

This species is recorded in Mendl (1987) from two localities, one in County Mayo and one in County Sligo.

See above note under *dentata* concerning misidentified specimens in the Clare Island Survey.

CORK: 15.vi.1901, Glengarriff (MT.4), JWY (Yerbury, 1902, sub *Goniomyia*); **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833, sub *Limnobia*); **MONAGHAN**: 20.v.1976, Carrickmacross H8-0- (PV.1), JHC; 21.v.1976, Lough Egish (PV.1), JHC; **ROSCOMMON**: 14.v.1970, Lough Ree (NV.4), PJC.

***Hoplolabis* (*Parilisia*) *areolata* (Siebke, 1873)**

Recorded by Mendl (1987) from one locality in County Meath along the banks of the River Boyne.

OFFALY: 10-12.viii.1991, 18-20.viii.1991, Little Brosna callows, in Malaise trap M9910 (NU.3), MCDS.

***Hoplolabis* (*Parilisia*) *vicina* (Tonnoir, 1920)**

Recently recorded as new to Ireland in Ashe and O'Connor (2005) though the spelling of the river was erroneously given as Mulleen which has been corrected to Multeen.

TIPPERARY: 2.vii.1992, Multeen River, Annacarty R9244 (NU.4), PA (Ashe and O'Connor, 2005).

***Hoplolabis* (*Parilisia*) *yezoana* (Alexander, 1924)**

The record of Mendl (1987) for *H. yezoana* in early June 1982 from a section of stream and dunes on the County Sligo coast was the first record for this species in the British Isles.

Recently the species has been added to the British fauna from four nearby riverbank localities upstream of the confluence of the Kingwater and Irthing Rivers in Cumbria (Parker, 2005) from specimens collected in July and September 2004. The above data indicates that the species is on the wing from at least June to September. Parker (*op. cit.*) states that the Irish specimen is in the Dublin Museum but this is incorrect as it was amongst material collected privately by Mendl. Some of Mendl's material was subsequently donated to the National Museum of Ireland but does not include *yezoana* or some of the other rare species.

The species is not listed in Falk (1991) but because it is evidently a rare species and is only known from five British Isles sites it should be placed in one of the red data book categories. Its exact red data book status is not yet decided

***Ilisia maculata* Meigen, 1804**

The "Wexford" record given in (Edwards, 1938: 131 under *Eriiptera* (*Ilisia*)) is not in the Natural History Museum (London) but could be based on a J. J. F. X. King specimen which may be in another British museum collection. Until the specimen can be located no further information can be given and since no specific locality in County Wexford is known the UTM grid square cannot be calculated.

CARLOW: 24.vii.1975, Graiguealug S766715 (PU.1), AES; **CLARE**: 19.v.1970, Lahinch, above Moy House (MU.3), PJC; 23.vii.1975, Bridget Lake, Tulla R556810 (NU.1), AES; **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833, sub *Erioptera maculata*); 18.viii.1974, Ballygowan J4163 (UF.2), AGI; **DUBLIN**: 27.vi.1975, Howth Woods, Dublin O2-3- (PV.4), PJC; 7.viii.1981, Slade of Saggart O033245 (PV.4), JPOC; **KERRY**: 14.ix.1982, near Dreenagh Q715320 (MU.2), EGH (Hancock, 1990 sub *Erioiptera*); **KILDARE**: 23.v.1982, Grand Canal N933263 (PV.4), JMOC; **KILKENNY**: 15.vii.1975, Davidstown S646186 (PT.1), AES; **TIPPERARY**: 21.vi.1975, Cregg S4-2- (PU.2), PJC; 15.vii.1975, north-west of Caher S030275 (NU.4), AES; **WEXFORD**: 15.vii.1975, near Newbawn S856244 (PU.4), AES; 2.vi.1986, Ferrycarrig T005228 (PT.3), JPOC; 7.vi.1986, Oaklands S715255 (PU.2), JMOC; **WICKLOW**: 11.vii.1969, Donard (PU.3), PJC; 11.vii.1971, near Dunlavin N8601 (PU.3), PJC; 24.vi.1975, Whaley Abbey T1-8- (PU.3), PJC; 16.viii.1981, Russelstown

Park N964109 (PU.3), JMOC.

***Ilisia occoecata* Edwards, 1936** **New to Ireland**

In Ireland this species appears to be the rarer of the two *Ilisia* species whereas in Britain *occoecata* is often found with and is almost as frequent in occurrence as *maculata*.

FERMANAGH: 28.v.1992, Reilly Wood, Crom Castle Estate H340255 (NA.4), KNAA.

***Molophilus appendiculatus* (Staeger, 1840)**

In Mendl (1987), the species is listed from various localities in Counties Clare, Cork, Galway, Kerry and Wicklow.

CLARE: 8.vii.1981, Lisdoonvarna R1397 (MU.3), JPOC; **CORK**: 19-20.vi.1970, Glengarriff State Forest V9157 (MT.4), RIVW; 12.vii.1976, Myross Wood, Leap W2036 (MT.4), JEC; 3.vii.1985, Bantry House V9848 (MT.4), JPOC; 12.vii.1985, Glengarriff V920565 (MT.4), JMOC; **DOWN**: 25.viii.1998, Nugent's Wood, Strangford Lough J5851 (UF.2), KNAA; **FERMANAGH**: 3.vi.1992, Florence Court H1734 (NA.4), KNAA; **GALWAY**: 29.v.1994, Derryclare Oakwood L8349 (MV.2), KNAA; **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE (Coe, 1950, "S.W. Ireland"); 28.vi.1969, 29.vi.1969, Rossacroonaloo Wood W0478 (MT.3), PJC; 30.vi.1969, 16.x.1973, Torc Cascade (MT.3), PJC; 2.vii.1969, Killarney, by Dinis Road between lakes (MT.3), PJC; 15.x.1973, Dromore Forest (MT.2), PJC; 16.vii.1975, 1 mile east of Barraduff W102911 (MT.3), AES; 17.vii.1975, Reen V870705 (MT.4), AES; LEITRIM: 30.viii.1998, 16.vi.1999, Glencar Woods G7543 (NA.2), KNAA; 16.vi.1999, O'Donnell's Rock G8835 (NA.4), KNAA; **MAYO**: 29.ix.1977, Westport Demesne L9-8- (MV.3), PJC; **TIPPERARY**: 22.vi.1975, wildlife sanctuary, near Dundrum R9-4- (NU.4), PJC; 22.vi.1975, Bansha Wood R9-3- (NU.4), PJC; 16.vii.1975, Burncourt R937192 (NT.3), AES; **WATERFORD**: 21.vi.1975, Gurteen S2-2- (NU.4), PJC; **WESTMEATH**: 22.vi.1989, Ballynafid Lake N4060 (PV.2), JPOC; **WEXFORD**: 7.vi.1986, Oaklands S715255 (PU.2), JMOC; 12.vi.1990, Oaklands S7125 (PU.2), JPOC; **WICKLOW**: 8.vii.1969, above Poll an Easa Waterfall, Glendalough T1195 (PU.3), PJC; 24.vi.1975, Whaley Abbey T1-8- (PU.3), PJC; 25.vi.1975, Powerscourt Deer Park O1-1- (PU.3), PJC; 17.vi.1993, Deputy's Pass, Glenealy T2390 (PU.3), KNAA.

***Molophilus ater* (Meigen, 1804)**

The entry for this species in Haliday's unpublished ms 'Catalogue of Irish insects' is reproduced in Figure 2.

Recorded by Mendl (1987) from one locality in County Kerry and one locality in County Wicklow.

ANTRIM: 19.v.1974, Masserene J1485 (PA.3), AGI; **CAVAN**: 1.v.1982, Bellananagh Lough H408001 (PV.1), JMOC; **CLARE**: 22.v.1985, Cooleabeg M163020 (MU.3), JMOC; **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833 sub *Erioptera atra*); 8.vii.1992, Slieve Donard J3528 (UF.2), KNAA (Alexander, 2005 "Mourne Mountains"); **GALWAY**: 1890's, Roundstone (MV.2), JNH (Carpenter, 1896); 1890's, Mc. Dara's I. [= St Macdara's Island] (MV.2), anon.; **LEITRIM**: 10.v.1970, Lough Rinn (NV.3), PJC; 13.v.1970, Dromahaire (NA.2), PJC; **MAYO**: vii.1910, Louisburgh (MV.1), JNH (Grimshaw, 1912); **ROSCOMMON**: 11.v.1970, Drumnone Dolmen (NV.1), PJC; **WATERFORD**: 5.vi.1988, Mahon Falls S3009 (NT.3), JPOC; 20.vi.1991, Mahon Falls S3009 (NT.3), JMOC; **WICKLOW**: 3.vi.1970, near Kippure Bog, 1,750' O140140 (PU.3), RIVW; iv.1988, Blackditch Wood O3103 (PU.3), PW (Blackith *et al*., 1991).

***Molophilus bifidus* Goetghebuer, 1920**

Listed in Mendl (1987) from Counties Clare and Kerry.

CARLOW: 24.vii.1975, Graiguealug S766715 (PU.1), AES; **CLARE**: 21.vii.1975, Lisdoonvarna R137980 (MU.3), AES; 23.vii.1975, Bridget Lake, Tulla R556810 (NU.1), AES; 22.v.1985, Cooleabeg M163020 (MU.3), JMOC; **KERRY**: 16.vii.1975, 1 mile east of Barraduff W102911 (MT.3), AES; **KILKENNY**: 15.vii.1975, Davidstown S646186 (PT.1), AES; 23.vi.1975, Jenkinstown Wood S4-6- (PU.2), PJC; **LOUTH**: 29.vi.1975, Ballymascanlon Swamp J0-1- (PV.3), PJC; 29.vi.1975, Thomastown N9-9- (PV.3), PJC; **MAYO**: no date [1909-1910], "Lough near Westport" [= Ballin and Coolbarren Loughs, near Westport] (MV.3), PHG (Grimshaw, 1912, sub *propinquus*); **MEATH**: 28.vi.1975, Hays N9-7- (PV.4), PJC; **OFFALY**: 10-12.viii.1991, 18-20.viii.1991, Little Brosna callows, in Malaise trap M9910 (NU.3), MCDS; **TIPPERARY**: 21.vi.1975, Cregg S4-2- (PU.2), PJC; 22.vi.1975, wildlife

sanctuary, near Dundrum R9-4- (NU.4), PJC; 15.vii.1975, north-west of Caher S030275 (NU.4), AES; **WEXFORD**: 14.vii.1975, Orristown T0413 (PT.3), AES; **WICKLOW**: 25.vi.1975, Powerscourt Deer Park O1-1- (PU.3), PJC; 26.vi.1975, Bellevue Woods, Glen of the Downs O2-1- (PU.3), PJC.

***Molophilus bihamatus* de Meijere, 1918**

A notable red data book species usually associated with alder carr (Falk, 1991).

KERRY: 25-27.v.1929, Killarney (MT.3), FWE (Edwards, 1929; Coe, 1950, "S.W. Ireland"); **LOUTH**: 29.vi.1975, Ballymascanlon Swamp J0-1- (PV.3), PJC.

***Molophilus cinereifrons* de Meijere, 1920**

Recorded by Mendl (1987) from localities in Counties Clare and Kerry.

GALWAY: 1.vi.1992, Coole Woods M4304 (NU.1), JMOC; **KILKENNY**: 23.vi.1975, Jenkinstown Wood S4-6- (PU.2), PJC; **TIPPERARY**: 22.vi.1975, wildlife sanctuary, near Dundrum R9-4- (NU.4), PJC.

***Molophilus crassipygus* de Meijere, 1920**

This species was recorded by Mendl (1987) under the name *ochrescens* Edwards from a single County Meath locality.

CORK: 16.vii.1975, Kildorrery R723106 (NT.1), AES; 16.vii.1975, Ballymaquirk Bridge, Banteer W385987 (NT.1), AES; **KILDARE**: 9.viii.1981, Rye Water O005363 (PV.4), JMOC; **LIMERICK**: 19.vii.1975, Adare Bridge R472466 (NU.2), AES; **LOUTH**: 29.vi.1975, Ballymascanlon Swamp J0-1- (PV.3), PJC; **TIPPERARY**: 15.vii.1975, north-west of Caher S030275 (NU.4), AES; **WATERFORD**: 15.vii.1975, 4 miles east of Tikineor S304225 (NU.4), AES; 29.vi.1988, Dunhill S5304 (PT.1), JPOC; **WEXFORD**: 15.vii.1975, near Newbawn S856244 (PU.4), AES; **WICKLOW**: 16.ix.1968, [near Poll an Easa Waterfall] Glendalough [T1195] (PU.3), PJC.

***Molophilus curvatus* Tonnoir, 1920** **New to Ireland**

The single male specimen of the species from County Wexford was collected in a marsh in which birch (*Betula*) and hazel (*Corylus*) were present.

WEXFORD: 3.vi.1986, Ferrycarrig T005228 (PT.3), JMOC.

***Molophilus czizeki* Lackschewitz, 1931**

Edwards (1929) mentions finding in Killarney several specimens of an unnamed and apparently undescribed black *Molophilus*. Subsequently Edwards (1938: 143) published a record of *czizeki* from "S. W. Ireland (Killarney)" which is evidently based on the specimens referred to in the 1929 paper.

A rare red data book species which is apparently associated with seepages, streams and waterfalls.

KERRY: 25-27.v.1929, Killarney (MT.3), FWE (Edwards, 1929 unnamed black *Molophilus*; Edwards, 1938 "S. W. Ireland (Killarney)"; Coe, 1950, "S.W. Ireland").

***Molophilus flavus* Goetghebuer, 1920**

The Clare Island specimen, which is in the National Museum of Ireland collections, was originally identified as "*ochraceus* Mg." in Grimshaw (1912). However, the specimen was re-identified as *flavus* by R. I. Vane-Wright in 1971. Specimens from five other localities under *ochraceus* in Grimshaw (1912) include mis-identified material of *pleuralis* (see below) from three localities but specimens from the remaining two localities (Brackloon Wood and Belclare) have not yet been found but are likely to belong to either *flavus* or *pleuralis*.

Mendl (1987) recorded the species from localities in Counties Kerry, Waterford and Wicklow.

DONEGAL: 9.vi.1999, Ballyloughan, Bruckless G7576 (NA.1), KNAA; **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE (Edwards, 1938, "Kerry"); 29.vi.1969, Glenflesk (MT.3), PJC; 9.ix.1981, Galway's Bridge, Killarney V9180 (MT.3), JPOC; **MAYO**: vii.1910, Clare Island (MV.1), PHG (Grimshaw, 1912 sub *ochraceus*); **WICKLOW**: 16.ix.1968, near Poll an Easa Waterfall, Glendalough T1195 (PU.3), PJC; 20.ix.1968, Glendalough, by Lugduff Brook below waterfall (PU.3), PJC; 24.vi.1975, Glendalough T1-9- (PU.3), PJC.

***Molophilus griseus* (Meigen, 1804)**

Specimens from two County Mayo localities in the Clare Island Survey (Grimshaw, 1912) were recorded under the name *bifilatus* Verrall which is a junior synonym of *griseus*. The Grimshaw specimen from Glendasan on Achill Island is in the National Museums of Scotland

(Edinburgh) and was not published in the Clare Island Survey.

Recorded by Mendl (1987) from Counties Clare, Cork, Donegal, Galway, Kerry, Sligo and Wicklow.

ANTRIM: 5.ix.1974, Ardmore Point, Lough Neagh J0979 (PA.3), AGI; 16.v.1975, Barnett's Park J3268 (UF.2), AGI; 16.v.1975, Dixon Park J3067 (UF.2), AGI; 19.v.1975, Bartin's Bay, Lough Neagh J0765 (PA.4), AGI; **ARMAGH**: 10.ix.1974, Ardmore Point, Lough Neagh J0063 (PA.4), AGI; **CAVAN**: 12.ix.1991, Woodlawn, Lough Sheelin N4686 (PV.1), JPOC; **CLARE**: 19.v.1970, Ennistymon (MU.3), PJC; 19.v.1970, Lahinch, above Moy House (MU.3), PJC; 19.v.1970, near Glennagh [= Gleninagh] Castle (MU.3), PJC; 19.v.1970, Doonmore Castle (MU.4), PJC; 22.v.1970, Lisdoonvarna R1397 (MU.3), PJC; 23.vii.1975, Bridget Lake, Tulla R556810 (NU.1), AES; 8.vii.1981, Lisdoonvarna R1397 (MU.3), JPOC; 30.v.1984, near Ennis R292796 (MU.3), JPOC; 18.v.1988, Caher Valley M1508 (MU.3), KNAA; 25.v.1992, Lisdoonvarna Spa R1397 (MU.3), JMOC; 25.v.1992, 31.vi.1992, Kilshanny R1293 (MU.3), JPOC; 26.v.1992, Fanore M1308 (MU.3), JPOC; 28.v.1992, Lough Bunny R3696 (NU.1), JPOC; 29.v.1992, Corkscrew Hill M2020 (MU.3), JPOC; 2.vi.1992, Gragan Castle, Burren M2003 (MU.3), JPOC; 4.vi.1992, Burren M2711 (MU.3), JMOC; **CORK**: 14.ix.1968, Glengarrif [= Glengarriff], beaten from oak (MT.4), PSB and HS; 19-20.vi.1970, Glengarriff State Forest V9157 (MT.4), RIVW; 29.v.1974, Dromnea V8-3- (MT.4), KCS; **DUBLIN**: 18.v.1991, Naul O1461 (PV.4), JPOC; **FERMANAGH**: 2.vi.1992, Castle Coole Park H2543 (NA.4), KNAA; 2.ix.1998, Florence Court H175344 (NA.4), KNAA; **GALWAY**: 22.ix.-3.x.1974, Letterdyfe House, Roundstone (MV.2), PO; 1.vi.1992, Coole Woods M4304 (NU.1), JMOC; **KERRY**: 26.v.1974, Connor Pass Q5-0- (MT.1), KCS; 15.ix.1981, Tomies Wood V915885 (MT.3), JPOC; 3.ix.1982, near Ballyheige Q7626 (MU.2), EGH (Hancock, 1990); 8.ix.1982, Ardfert Q7821 (MT.1), EGH (Hancock, 1990); 14.ix.1982, near Dreenagh Q715320 (MU.2), EGH (Hancock, 1990); **KILDARE**: 4.vi.1970, Lullybeg, rank vegetation by lake, 250' N710240 (PV.2), RIVW; 18.x.1973, Ardscull Mote (PU.1), PJC; 14.xi.1981, Straffan N937266 (PV.4), JMOC; 30.viii.1991, Louisa Bridge N9936 (PV.4), JPOC; 8.ix.1985, Newbridge Fen N7616 (PU.1), JMOC; **LEITRIM**: 15.v.1970, Glencar, near waterfall (NA.2), PJC; **MAYO**:

9.vi.1909, Clare Island (MV.1), ?JNH (Grimshaw, 1912 sub *bifilatus*); no date [1909-1910], Glendarary or Glendarie, Achill Island (MV.1), ?JNH (Grimshaw, 1912 sub *bifilatus*); 14.vi.1909, Glendasan, Achill Island (MV.1), PHG; 29.ix.1977, Westport Demesne L9-8- (MV.3), PJC; 30.ix.1977, Lough Conn, north of Pontoon G1-0- (MV.3), PJC; 30.ix.1977, Rosserk Friary G2-2- (MA.4), PJC; 30.v.1994, Old Head L8383 (MV.1), KNAA; **OFFALY**: 10-12.viii.1991, 18-20.viii.1991, Little Brosna callows, in Malaise trap M9910 (NU.3), MCDS; **ROSCOMMON**: 28.ix.1977, Castlerea M6-8- (NV.1), PJC; 28.ix.1977, Lough Key Forest Park G8-0- (NV.1), PJC; **SLIGO**: 1.x.1977, Templehouse G6-1- (NV.1), PJC; 1.x.1977, Collooney G6-2- (NA.2), PJC; 1.x.1977, Glen of Karocknarea [= Knocknarea] G6-3- (NA.2), PJC; 1.x.1977, Ballinacarrow G6-1- (NV.1), PJC; **TYRONE**: 22.v.1975, Washing Bay, Lough Neagh H9066 (PA.4), AGI; **WATERFORD**: 11.vi.1991, Belle Lake S6605 (PT.1), JPOC; 12.vi.1991, 2km north-west of Passage East S684115 (PT.1), JPOC; **WESTMEATH**: 30.v.1990, Derravaragh Lough N4762 (PV.2), JPOC; **WEXFORD**: 20.x.1973, Tagoat (PT.3), PJC; 14.vii.1975, Orristown T0413 (PT.3), AES; 5.ix.1980, Stoneyford T105098 (PT.3), JMOC; 3.vi.1986, Ferrycarrig T005228 (PT.3), JMOC; 4.vi.1986, The Raven T110260 (PU.4), JPOC; 6.vi.1986, 9.vi.1986, Nethertown T125050 (PT.3), JMOC; 25.v.1987, Lady's Island Lake T104071 (PT.3), JPOC; 27.v.1987, Killoughrim Forest Park S8941 (PU.4), JPOC; 10.vi.1991, Curracloe T1127 (PU.4), JPOC; **WICKLOW**: 15.ix.1968, Blessington, shore of Lacken Reservoir (PU.3), PJC; 27.v.1988, Avondale T1985 (PU.3), JPOC; vi.-x.1988, Blackditch Wood O3103 (PU.3), REB/RMB, Malaise trap sample (Blackith *et al.*, 1991); v.-vi.1988, Killoughter Marsh Field T3199 (PU.3), REB/RMB (Blackith *et al.*, 1991).

***Molophilus lackschewitzianus* Alexander, 1952**

A rare red data book species (Falk, 1991) usually associated with shaded streams in woodland on clay soils.

LEITRIM: 15.v.1970, Glencar, lightly wooded ground near a waterfall (NA.2), PJC (Stubbs and Chandler, 1973).

***Molophilus medius* de Meijere, 1918**

In Britain, it is one of the commonest of the yellow coloured species but only known from

two Irish localities.

WICKLOW: 16.ix.1968, Glendalough, by Rí Fearta Church T1296 (PU.3), PJC (Ashe *et al.*, 1991); 11.vii.1971, near Dunlavin N8601 (PU.3), PJC (Ashe *et al.*, 1991).

***Molophilus obscurus* (Meigen, 1818)**

Mendl (1987) found the species in various localities in Counties Galway, Kerry, Sligo and Wicklow.

The Louisburgh specimen from County Mayo (Grimshaw, 1912) is the only specimen from the Clare Isalnd Survey in the National Museum of Ireland collections and was correctly identified as *obscurus*. However, the specimens from Clare Island and the Lough near Westport are in the National Museums of Scotland (Edinburgh) though the locality label on the latter does not say "Lough near Westport" as published in Grimshaw (1912) but instead says "Ballin and Cool barren Loughs".

There are four Irish Haliday specimens in the National Museum of Ireland all of which lack locality data.

ANTRIM: 30.vi.1975, Masserene, Lough Neagh J1-8- (PA.3), PJC; 26.viii.1998, Ballyconagan area of Rathlin Island, south-west wetlands D143517 (PB.4), KNAA; 27.viii.1998, Ballycarry Field Pond, Rathlin Island D152516 (PB.4), KNAA; 27.viii.1998, eastern rises, Ballyconagan, Rathlin Island D152518 (PB.4), KNAA; 23.vi.1992, Cushleake Mountain D2238 (PB.4), KNAA; **CARLOW**: 18.vi.1991, Bahana Woods S7239 (PU.2), JPOC; **CLARE**: 31.vii.1988, Fanore M1308 (MU.3), JPOC; **CORK**: 31.v.1974, Kilbrittain W5-4- (NT.2), KCS; 3.vii.1985, Sheep's Head V731340 (MT.2), JPOC; **DOWN**: 24.viii.1974, Deer Bay, Main Copeland Island J5983 (UF.1), AGI; **DUBLIN**: 7.viii.1981, Slade of Saggart O033245 (PV.4), JPOC; **KERRY**: viii.1940, Killarney (MT.3), BPB; 2.vii.1969, Killarney, by Dinis Road between lakes (MT.3), PJC; 17.vii.1975, Derrygarrin, Lake Barfinnity V850766 (MT.3), AES; **KILDARE**: 11.ix.1985, Newbridge Fen N767166 (PU.1), JPOC; 6.vi.1991, Louisa Bridge N9936 (PV.4), JPOC; **LAOIS**: 16.vi.1993, Abbeyleix S4082 (PU.1), KNAA; **MAYO**: no date [1909-1911], vii.1910, Clare Island (MV.1), PHG (Grimshaw, 1912); i.viii.1911, lough near Westport [= Ballin and Cool barren Loughs] (MV.3), PHG (Grimshaw, 1912); vii.1910, Louisburgh

(MV.1), JNH (Grimshaw, 1912); **MEATH**: 19.v.1991, Kilmessan N8857 (PV.4), JMOC; **TIPPERARY**: 15.vii.1975, north-west of Caher S030275 (NU.4), AES; **WEXFORD**: 25.vii.1970, Cahore T2244 (PU.4), RIVW; 10.vi.1991, Curracloe T1127 (PU.4), JPOC; **WICKLOW**: 15.ix.1968, Blessington, shore of Lacken Reservoir (PU.3), PJC; 22.viii.1988, near Calary Lower O234119 (PU.3), JPOC.

***Molophilus occultus* de Meijere, 1918**

In Mendl (1987), the species is recorded from localities in Counties Cork, Galway and Kerry.

CORK: 4.vii.1969, Glengarriff State Forest (MT.4), PJC; 19-20.vi.1970, Glengarriff State Forest V9157 (MT.4), RIVW; 10.vii.1985, tunnel near Glengarriff V909598 (MT.4), JMOC; **KERRY**: 4.vii.1969, Owenreagh River Valley, Killarney (MT.3), PJC; 12.vi.1970, Lough Gal, 400' Q476068 (MT.1), RIVW; 16.vi.1970, Lough Accose V750850 (MT.1), RIVW; **GALWAY**: 29.v.1994, Derryclare Oakwood L8349 (MV.2), KNAA; **MAYO**: iv.1970-vi.1972, Glenamoy F877334 (MA.4), EFO, larvae in peat in undisturbed blanket bog (Okely, 1979); **OFFALY**: 5.vi.1970, near Ballaghassan [= Ballaghassaan] Bog, 250' N537218 (PV.2), RIVW; **WATERFORD**: 5.vii.1988, Mahon Falls S3009 (NT.3), JPOC; **WICKLOW**: 17.ix.1968, Glenmacnass, near waterfall (PU.3), PJC; 8.vii.1969, above Poll an Easa Waterfall, Glendalough T1195 (PU.3), PJC; 24.vi.1975, Whaley Abbey T1-8- (PU.3), PJC.

***Molophilus ochraceus* (Meigen, 1818)**

See notes under *flavus* and under *pleuralis* concerning misidentified *ochraceus* specimens from the Clare Island Survey.

Recorded from Counties Galway and Kerry by Mendl (1987).

CARLOW: 24.vii.1975, Graiguealug S766715 (PU.1), AES; **DUBLIN**: 27.vi.1975, Howth Woods, Dublin O2-3- (PV.4), PJC; **OFFALY**: 30.iv.1984, Clara Bog N265295 (NV.4), JPOC; 8.ix.1988, All Saints Bog N0010 (NU.3), REB/RMB (Speight, 1990); **ROSCOMMON**: 16.vi.1999, Glasdrummen, Lough Allen G950145 (NV.3), KNAA; **TIPPERARY**: 22.vi.1975, Woodrooff S1-2- (NU.4), PJC; **WATERFORD**: 27.v.1991, Ballin Lough S4403 (PT.1), JPOC; **WICKLOW**: 24.vi.1975, Whaley Abbey T1-8- (PU.3), PJC; v.-viii.1988, Blackditch Wood

O3103 (PU.3), REB/RMB, Malaise trap sample (Blackith *et al.*, 1991); v.-vi.1988, Killoughter Marsh Field T3199 (PU.3), REB/RMB (Blackith *et al.*, 1991); 27.v.1991, beside the River Vartry, at Mount Usher, Ashford T2796 (PU.3), JMOC.

***Molophilus pleuralis* de Meijere, 1918**

There are no Clare Island Survey specimens of *pleuralis* in the collections of the National Museum of Ireland. The record for "Co. Mayo (Ballin Lough and Westport)" [= Lough near Westport] given in Edwards (1938: 144) is evidently based on specimens from the Clare Island Survey but because *pleuralis* was only described in 1918 this species is obviously not mentioned in Grimshaw (1912). However, there are specimens of *pleuralis* from three County Mayo localities detailed below which are all in the National Museums of Scotland (Edinburgh). It appears that specimens from these three localities were mis-identified and published in Grimshaw (1912) under the name *ochraceus*. The *pleuralis* material from "Lough near Westport" (Grimshaw, 1912, sub *ochraceus*) is in the National Museums of Scotland (Edinburgh) but the locality label does not say "Lough near Westport" as published by Grimshaw (*op. cit.*) but instead says "Ballin and Cool barren Loughs".

There are also three further County Mayo localities mentioned in Grimshaw (1912) under *ochraceus*. The Clare Island specimen (which is in the National Museum of Ireland) is a mis-identified *flavus* (see above under this species). The identity of specimens from the other two localities (Brackloon Wood and Belclare) are excluded from further consideration since they cannot be determined as no surviving specimens have yet been found though they are likely to belong to either *flavus* or *pleuralis*.

There are records in Mendl (1987) from Counties Clare, Cork, Galway and Mayo.

CLARE: 21.v.1985, Lough Bunny R3696 (NU.1), JMOC; **CORK**: 30.v.1974, Bealad W3-4-(NT.2), KCS; **KERRY**: 6.ix.1982, Blennerville, near Tralee Q815135 (MT.1), EGH (Hancock, 1990); **MAYO**: 21.vii.1911, Castlebar Lough (MV.3), PHG (Grimshaw, 1912, sub *ochraceus*); 1.viii.1911, Lough near Westport [= Ballin and Cool barren Loughs] (MV.3), PHG (Grimshaw, 1912, sub *ochraceus*; Edwards, 1938: 144 "Co. Mayo (Ballin Lough and Westport)"; Coe, 1950, "N.W. Ireland"); 3.vii.1911, Knappagh (MV.3), PHG (Grimshaw, 1912, sub *ochraceus*);

MEATH: 31.v.1989, Batterjohn Big N8953 (PV.4), JPOC; **WEXFORD**: 25.vii.1970, Cahore T2244 (PU.4), RIVW; 25.v.1987, Lady's Island Lake T104071 (PT.3), JPOC; **WICKLOW**: 1.vi.1970, near Six Mile Point, dykes and reeds O315050 (PU.3), RIVW; x.1988, Blackditch Wood O3103 (PU.3), REB/RMB (Blackith *et al*., 1991); v.1989, Blackditch Wood O3103 (PU.3), REB/RMB, bred from rotten birch wood (Blackith *et al*., 1991); v.1988, Killoughter Fen T3199 (PU.3), REB/RMB, bred from *Phragmites* stem bases (Blackith *et al*., 1991).

***Molophilus propinquus* (Egger, 1863)**

In Mendl (1987), there are records from four localities in County Donegal and one locality in County Kerry.

The sole *propinquus* record detailed in Grimshaw (1912) is a misidentified specimen of *bifidus* (see above).

ANTRIM: 30.vi.1975, Masserene, Lough Neagh J1-8- (PA.3), PJC; **CLARE**: 7.vi.1970, Lough Atorick, 460' R635960 (NU.1), RIVW; 22.v.1985, Cooleabeg M163020 (MU.3), JMOC; **OFFALY**: 5.vi.1970, near Bracknagh, *Iris* filled dyke N612173 (PU.1), RIVW.

***Molophilus pusillus* Edwards, 1921**

This parthenogenetic species was recorded by Mendl (1987) from localities in Counties Cork, Galway and Kerry.

DOWN: 18.viii.1974, Ballygowan J4163 (UF.2), AGI; **TIPPERARY**: 22.vi.1975, Bansha Wood R9-3- (NU.4), PJC.

***Molophilus serpentiger* Edwards, 1938**

The *serpentiger* specimen from Killarney, County Kerry, which was collected by Edwards in 1929, is part of the type-series and is labelled as a syntype in the World Collection of Limoniidae in the Natural History Museum, London.

Recorded by Mendl (1987) from two localities, one in County Galway and one in County Sligo.

CARLOW: 14.vi.1991, Bahana Woods S7239 (PU.2), JMOC; 18.vi.1991, Bahana Woods S7239 (PU.2), JPOC; **CLARE**: 25.v.1992, Lisdoonvarna Spa R1397 (MU.3), JMOC; **DUBLIN**: 2.vi.1953, 12.vi.1953, Howth (PV.4), RLC; **KERRY**: 25-27.v.1929, Killarney

(MT.3), FWE (Edwards, 1938, "Kerry"); **KILDARE**: 4.vi.1970, Lullybeg, rank vegetation by lake, 250' N710240 (PV.2), RIVW; **TIPPERARY**: 27.v.1984, near Ballina, small wood R710725 (NU.1), JPOC; **WATERFORD**: 1.vi.1991, 11.vi.1991, Belle Lake S6605 (PT.1), JPOC; **WEXFORD**: 2.vi.1986, Ferrycarrig T005228 (PT.3), JPOC; 3.vi.1986, Ferrycarrig T005228 (PT.3), JMOC; 27.v.1987, Killoughrim Forest Park S8941 (PU.4), JPOC; **WICKLOW**: 24.vi.1975, Whaley Abbey T1-8- (PU.3), PJC; 25.vi.1975, Devil's Glen T2-9- (PU.3), PJC; 26.vi.1975, Bellevue Woods, Glen of the Downs O2-1- (PU.3), PJC; 15.v.1991, Knocksink Wood O2117 (PU.3), JPOC.

***Neolimnophila carteri* (Tonnoir, 1921)**

A notable red data book species associated with damp woods with streams (Falk, 1991).

WICKLOW: 24.vi.1975, Derrybawn Woods T1-9- (PU.3), PJC (Ashe *et al.*, 1991).

***Ormosia* (*Ormosia*) *albitibia* Edwards, 1921**

The record by Hancock (1990) is apparently the first Irish record.

KERRY: 9.ix.1982, Glanafahan V336970 (MT.1) EGH (Hancock, 1990).

***Ormosia* (*Ormosia*) *depilata* Edwards, 1938**

The record of *depilata* listed in Ashe *et al.* (1991) from County Kerry (Muckross Abbey Woods) is a mis-identified specimen of *hederea* .

ANTRIM: 24.v.1975, Glarryford Bog, near Clogh Mills D0515 (PA.3), AGI (Ashe *et al.*, 1991); **DOWN**: 13.iv.1975, Rostrevor J1817 (PV.3), AGI (Ashe et al., 1991); **TYRONE**: 8.v.1970, Gortin Glen National Forest Park H4881 (PA.1), PJC (Ashe *et al.*, 1991); **WEXFORD**: 20.iv.1990, Oaklands S7125 (PU.2), JPOC; **WICKLOW**: 3.vi.1970, near Kippure Bog, 1,750' O140140 (PU.3), RIVW; 24.iv.1989, Glendalough T1195 (PU.3), JMOC; 8.vii.1969, below Poll an Easa Waterfall, Glendalough T1195 (PU.3), PJC (Ashe *et al.*, 1991); 15.v.1991, Knocksink Wood O2117 (PU.3), JPOC.

***Ormosia* (*Ormosia*) *hederae* (Curtis, 1835)**

This species was recorded by Mendl (1987) from Counties Donegal, Galway, Kerry and Mayo.

ANTRIM: 16.v.1975, Barnett's Park J3268 (UF.2), AGI; 16.v.1975, Dixon Park J3067 (UF.2),

AGI; 8.vi.1992, Giant's Causeway C9444 (PB.4), KNAA; 23.vi.1992, Cushleake Mountain D2238 (PB.4), KNAA; **CAVAN**: 7.vi.1953, Drumcarban (PV.1), RLC; 12.ix.1991, Woodlawn, Lough Sheelin N4686 (PV.1), JPOC; **CLARE**: 18.v.1970, Cratloe Wood (NU.2), PJC; 22.v.1970, Lisdoonvarna R1397 (MU.3), PJC; 20.v.1974, Ballyvaughan M1-0- (MU.3), KCS; 22.v.1985, Cooleabeg M163020 (MU.3), JMOC; **DOWN**: 16.v.1975, Stormont J3974 (UF.1), AGI; 18.v.1975, Ballygowan Wood J4163 (UF.2), AGI; **GALWAY**: 22.ix.-3.x.1974, Letterdyfe House, Roundstone (MV.2), PO; **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE (Edwards, 1938, "Ireland"); 16.x.1973, Muckross Abbey Woods (MT.3), PJC (Ashe *et al.*, 1991, mis-identified as *depilata*); 14.ix.1982, near Dreenagh Q715320 (MU.2), EGH (Hancock, 1990); **KILDARE**: 11.ix.1985, Newbridge Fen N767166 (PU.1), JPOC; 29.iv.1987, Carton N9637 (PV.4), JPOC; 6.vi.1991, Louisa Bridge N9936 (PV.4), JPOC; 8.ix.1991, Newbridge Fen N7616 (PU.1), JMOC; **LEITRIM**: 2.x.1977, Glencar G7-4- (NA.2), PJC; **MAYO**: 25-27.ix.1974, Cong (MV.4), PO; 29.ix.1977, Westport Demesne L9-8- (MV.3), PJC; 30.ix.1977, Lough Conn, north of Pontoon G1-0- (MV.3), PJC; **MEATH**: 7.v.1991, Batterjohn Big N8953 (PV.4), JPOC; **MONAGHAN**: 20.v.1976, Carrickmacross H8-0- (PV.1), JHC; 21.v.1976, Lough Egish (PV.1), JHC; **ROSCOMMON**: 28.ix.1977, Castlerea M6-8- (NV.1), PJC; 28.ix.1977, Lough Key Forest Park G8-0- (NV.1), PJC; **SLIGO**: 1.x.1977, Templehouse G6-1- (NV.1), PJC; 1.x.1977, Collooney G6-2- (NA.2), PJC; 1.x.1977, Ballinacarrow G6-1- (NV.1), PJC; **WEXFORD**: 3.vi.1984, Curracloe T1027 (PU.4), JPOC; **WICKLOW**: 3.vi.1974, Arklow T2-7- (PU.3), KCS; x.1988, Blackditch Wood O3103 (PU.3), REB/RMB (Blackith *et al.*, 1991); iv.1989, Blackditch Wood O3103 (PU.3), REB/RMB, bred from wet soil under birch (Blackith *et al.*, 1991); vii.1988, Clonmannon Wood T3098 (PU.3), REB/RMB (Blackith *et al.*, 1991).

***Ormosia* (*Ormosia*) *lineata* (Meigen, 1804)**

Although this species (as *Erioptera lineata*) is recorded as Irish (i.e. "(E. S. I.)" where "I" = Ireland) in Walker (1856: 276) we consider that the identification is unreliable because there are several other *Ormosia* species now known in Ireland which were not recognised in the mid 19th century. Consequently, the records given below are the first confirmed Irish records.

CAVAN: 16.iv.1989, Virginia, alder marsh N586881 (PV.1), JMOC; **OFFALY**: 28.iv.1987, Charleville Wood, Tullamore N3222 (NV.4), JPOC; **WEXFORD**: 28.iii.1989, Tintern S7810 (PT.1), JPOC; 30.iii.1989, Ferrycarrig T0023 (PT.3), JPOC; **WICKLOW**: 26-27.iv.1986, Glen of the Downs O2611 (PU.3), JMOC, JPOC.

***Ormosia* (*Ormosia*) *nodulosa* (Macquart, 1826)**

In Mendl (1987), the species was recorded from Counties Clare, Donegal, Galway, Kerry and Wicklow.

ANTRIM: 16.v.1975, Barnett's Park J3268 (UF.2), AGI; 16.v.1975, Dixon Park J3067 (UF.2), AGI; 9.vi.1992, Plaskin Head, Causeway Coast C958454 (PB.4), KNAA; 15.vi.1992, Murlough Cottage Wood D198418 (PB.4), KNAA; **CARLOW**: 14.vi.1991, Bahana Woods S7239 (PU.2), JMOC; **CAVAN**: 15.v.1989, Virginia Woods N5987 (PV.1), JPOC; **CLARE**: 29.v.1984, Ballyeighter R346940 (NU.1), JMOC; 30.v.1984, near Ennis R292796 (MU.3), JPOC; 29.v.1992, Corkscrew Hill M2020 (MU.3), JPOC; **CORK**: 28.vi.1969, Tobar Ghobnatan, near Ballyvourney (MT.3), PJC; 19-20.vi.1970, Glengarriff State Forest V9157 (MT.4), RIVW; 29.v.1974, Dunboy Castle V6-4- (MT.2), KCS; 3.vii.1985, Bantry House V9848 (MT.4), JPOC; **DOWN**: 18.v.1975, Ballygowan Wood J4163 (UF.2), AGI; **DUBLIN**: 12.vi.1953, Howth (PV.4), RLC; 17.vii.1971, Howth (PV.4), PJC; 27.vi.1975, Howth Woods, Dublin O2-3- (PV.4), PJC; 6.x.1985, Malahide Castle O2253 (PV.4), JMOC; **GALWAY**: 1.vi.1992, Coole Woods M4304 (NU.1), JMOC; 3.vi.1994, Ballynahinch Woods L7648 (MV.2), KNAA; **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE (Edwards, 1938, "Ireland"); **KILKENNY**: 20.vi.1990, Clonassy Wood S5622 (PU.2), JMOC; 4.vii.1990, Harristown S5127 (PU.2), JPOC; **MAYO**: vii.1910, Clare Island (MV.1), PHG (Grimshaw, 1912 sub *Rhypholophus nodulosus*); no date [1909-1911], Brackloon Wood, near Westport (MV.3), PHG (Grimshaw, 1912 sub *Rhypholophus nodulosus*); **TIPPERARY**: 22.vi.1975, Woodrooff S1-2- (NU.4), PJC; 22.vi.1975, wildlife sanctuary, near Dundrum R9-4- (NU.4), PJC; 22.vi.1975, Bansha Wood R9-3- (NU.4), PJC; **WATERFORD**: 21.vi.1975, Gurteen S2-2- (NU.4), PJC; 12.vi.1991, 2km north-west of Passage East S684115 (PT.1), JPOC; 3.vii.1991, Passage East S6811 (PT.1), JMOC; **WEXFORD**: 2.vi.1986, Ferrycarrig T005228 (PT.3), JPOC; 10.vi.1986, Oaklands,

mixed woodland S715255 (PU.2), JPOC; 27.v.1987, Killoughrim Forest Park S8941 (PU.4), JPOC; 17.vi.1990, river at Fethard S7806 (PT.1), JPOC; 8.vi.1991, Coolbawn House S8337 (PU.4), JMOC; 9.vi.1991, Urrin River woods S8743 (PU.4), JMOC; 21.vi.1991, John Fitzgerald Kennedy Park S7319 (PT.1), JMOC; **WICKLOW**: 11.vii.1969, Glen of the Downs (PU.3), PJC; 24.vi.1975, Whaley Abbey T1-8- (PU.3), PJC; 24.vi.1975, Glendalough T1-9- (PU.3), PJC; 25.vi.1975, Powerscourt Deer Park O1-1- (PU.3), PJC; 25.vi.1975, Devil's Glen T2-9- (PU.3), PJC; 27.v.1988, Avondale T1985 (PU.3), JPOC; 15.vi.1988, Powerscourt O2012 (PU.3), JPOC.

***Ormosia* (*Ormosia*) *pseudosimilis* (Lundström, 1912)**

Recorded from Counties Waterford and Wicklow by Mendl (1987).

CORK: 12.vii.1985, Glengarriff V920565 (MT.4), JMOC.

***Rhypholophus* (*Rhypholophus*) *bifurcatus* (Goetghebuer, 1920)** **New to Ireland**

In Britain, it is a common species in calcareous woods.

DUBLIN: 1.xi.1981, Slade of Saggart O033245 (PV.4), JMOC; **WICKLOW**: 19.x.1989, Knocksink Wood O2118 (PU.3), JMOC.

***Rhypholophus* (*Rhypholophus*) *varius* (Meigen, 1818)**

In Britain, a common species of moist and wet woods on clay soils.

ANTRIM: 2.x.1977, Barnett's Park, Belfast J3-7- (UF.2), PJC; **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833 sub *Erioptera varia*); **GALWAY**: 22.ix.-3.x.1974, Roundstone (MV.2), PO; 22.ix.-3.x.1974, Letterdyfe House, Roundstone (MV.2), PO; **MAYO**: 25-27.ix.1974, Cong (MV.4), PO; 29.ix.1977, Westport Demesne L9-8- (MV.3), PJC; **ROSCOMMON**: 28.ix.1977, Castlerea M6-8- (NV.1), PJC; **WICKLOW**: 16.ix.1968, Glendalough, by Rí Fearta Church T1296 (PU.3), PJC; 20.ix.1968, Glendalough, by Green Road (PU.3), PJC; 20.ix.1968, Glendalough, by Lugduff Brook (PU.3), PJC; 14.ix.1984, Coolattin T0169 (PU.4), JPOC.

***Scleroprocta sororcula* (Zetterstedt, 1851)** **New to Ireland**

At Uragh Wood, two pupae were found and reared, one pupa amongst debris beneath loose bark and the second within brackets of the fungus *Piptoporus betulinus*, the Birch Polypore, on

old birch trunks. In Britain, it is a scarce species which has been successfully reared from larvae found in galleries of the Birch Polypore bracket-fungus (Alexander, 2002).

KERRY: 25.v.1994, Uragh Wood V830630 (MT.4), KNAA.

***Symplecta* (*Psiloconopa*) *stictica* (Meigen, 1818)**

In Hogan and Haliday (1855: 54), the species was recorded as "*Symplecta stictica*, *similis* (?)" which seems to imply uncertainty about which of the two species names to apply but *similis* (Schummel, 1829) is a junior synonym of *stictica*. The entry for the genus *Symplecta* in Haliday's unpublished ms 'Catalogue of Irish insects' is reproduced in Figure 3. There are three Irish Haliday specimens of *stictica* in the National Museum of Ireland.

Mendl (1987) recorded this species from Counties Clare, Cork, Kerry, Mayo and Meath. **ANTRIM**: 9.viii.1974, Lady Bay, near Glenavy, Lough Neagh J0969 (PA.4), AGI; 30.vi.1975, Masserene, Lough Neagh J1-8- (PA.3), PJC; 8.vi.1992, Giant's Causeway C9444 (PB.4), KNAA; **CLARE**: 19.v.1970, Doonmore Castle (MU.4), PJC; 26.v.1992, Fanore M1308 (MU.3), JPOC; 29.v.1992, near Formoyle, Burren M1606 (MU.3), JPOC; 4.vi.1992, Burren M2711 (MU.3), JMOC; **CORK**: 9.ix.1968, grounds of Dunboy Castle, Castletownbere, saltmarsh (MT.2), PSB and HS; 16.vii.1975, Kildorrery R723106 (NT.1), AES; **DERRY**: 10.vi.1992, Bar Mouth C795354 (PB.2), KNAA; 10.vi.1992, Grangemore C811353 (PB.2), KNAA; **DOWN**: 1827-1831, Holywood (UF.1), AHH (Haliday, 1833); 17.viii.1974, Stormont J3974 (UF.1), AGI; 26.iv.1975, Hillsborough Forest J2458 (PA.4), AGI; 20.v.1992, Dundrum Inner Bay J397344 (UF.2), KNAA; 29.vi.1992, Orlock Point J558838 (UF.1), KNAA; 21.viii.1998, Ann's Point, Strangford Lough J5568 (UF.2), KNAA; 18.viii.1998, Ballyurnanellan J5667 (UF.2), KNAA; 21.viii.1998, Comber Estuary, Strangford Lough J4767 (UF.2), KNAA; 18.viii.1998, Greyabbey J5767 (UF.2), KNAA; 18.viii.1998, Mid Island, Strangford Lough J5667 (UF.2), KNAA; 17.viii.1998, South Island, Strangford Lough J5666 (UF.2), KNA; **DUBLIN**: 27.v.1961, North Bull Island, Dublin Bay (PV.4), BH (Healy, 1975a, b; Speight and Healy, 1977); 25.iv.1982, Bull Island O2438 (PV.4), JMOC; **FERMANAGH**: 2.ix.1998, Florence Court H175344 (NA.4), KNAA; **GALWAY**: no date [?vii.1975], Ballyshrule Bridge M798056 (NU.1), AES; **KERRY**: vii.1854, towards the bay, mouth of the

Maine River, near Milltown, (MT.1), AHH (Hogan and Haliday, 1855 sub "*stictica, similis*(?)"); 18.vii.1975, The Sound, Kenmare V930708 (MT.4), AES; 3.ix.1982, near Ballyheige Q7626 (MU.2), EGH (Hancock, 1990 sub *Erioptera*); 6.ix.1982, Blennerville, near Tralee Q815135 (MT.1), EGH (Hancock, 1990 sub *Erioptera*); 8.ix.1982, Ardfert Q7821 (MT.1), EGH (Hancock, 1990 sub *Erioptera*); **LIMERICK**: 19.vii.1975, Limerick City R575597 (NU.2), AES; 19.vii.1975, Adare Bridge R472466 (NU.2), AES; **LOUTH**: 29.vi.1975, Ballymascanlon Swamp J0-1- (PV.3), PJC; **MAYO**: no date [1909-1911], 29.vii.1911, Westport, in Demesne (MV.3), PHG (Grimshaw, 1912); **MEATH**: 6.x.1989, Batterjohn Big N8953 (PV.4), JPOC; **OFFALY**: 30.iv.1984, Clara Bog N265295 (NV.4), JPOC; 8.ix.1988, All Saints Bog N0010 (NU.3), REB/RMB (Speight, 1990 sub *Erioptera*); **ROSCOMMON**: 28.ix.1977, Castlerea M6-8- (NV.1), PJC; **WATERFORD**: 1.vi.1974, Cappoquin X0-9- (NT.3), KCS; **WESTMEATH**: 2.vii.1980, Coosan Lough, light trap N050544 (NV.4), JPOC; **WEXFORD**: 12.vii.1969, Clonmines (PT.3), PJC; 25.vii.1970, Cahore T2244 (PU.4), RIVW; 3.vi.1974, Rosslare T0-1- (PT.3), KCS; 14.vii.1975, Orristown T0413 (PT.3), AES; 28.viii.1980, 4.ix.1980, 25.v.1987, Lady's Island Lake T104071 (PT.3), JPOC; 2.ix.1980, Wexford Town, brackish pond T0519 (PT.3), JPOC; 26.v.1987, Ballyteige S9504 (PT.3), JPOC; 30.iii.1989, 11.vi.1990, Ferrycarrig T0023 (PT.3), JPOC; 10.vi.1990, 5.vii.1991, Fethard S7905 (PT.1), JPOC; 10.vi.1991, Curracloe T1127 (PU.4), JPOC; **WICKLOW**: v-vii.1940, Bray (PU.3), BPB; vi.1941, Glenart (PU.3), BPB; 15.ix.1968, Blessington, shore of Lacken Reservoir (PU.3), PJC; 18.ix.1968, Kilcoole (PU.3), PJC; 1.vi.1970, near Six Mile Point, dykes and reeds O315050 (PU.3), RIVW; iv.-ix.1988, Blackditch Wood O3103 (PU.3), REB/RMB, Malaise trap sample (Blackith *et al*., 1991); v.1989, The Breaches O3106 (PU.3), REB/RMB, bred from peaty soil (Blackith *et al*., 1991); iv.1988 and iv.-x.1988, Killoughter Marsh Field T3199 (PU.3), REB/RMB (Blackith *et al*., 1991).

***Symplecta* (*Symplecta*) *hybrida* (Meigen, 1804)**

Under the name *Symplecta punctipennis* (Meigen), a junior synonym of *hybrida*, this species is recorded in Walker (1856: 279-280) as "Not. rare. {E. S. I.)" where "I" represents Ireland. In

Haliday's ms 'Catalogue of Irish insects' (Figure 3), also under the name *Symplecta punctipennis*, this species is listed with the abbreviation "Hwd" for Holywood, County Down in the right-hand margin. The species is not listed in Haliday (1833) and was probably collected by Haliday at a later period, probably sometime between the mid 1830's and the 1850's.

Recorded by Mendl (1987) from Counties Kerry and Sligo.

DOWN: no date [1830's-1850's], Holywood (UF.1), AHH (Walker, 1856 sub *punctipennis* (Meigen)); **KILDARE**: 6.vi.1991, Louisa Bridge N995368 (PV.4), PA; **WEXFORD**: 10.vi.1991, Curracloe T1127 (PU.4), JPOC.

***Tasiocera* (*Dasymophilus*) *collini* Freeman, 1951**

All three Irish *Tasiocera* species, including one adult female specimen of *T. collini*, were collected by Mendl (1987) from a single site on the 9th June 1982 along a roadside verge about six kilometres south of Kilgarvan in the southern part of County Kerry. *Tasiocera collini* is an endangered Red Data Book (RDB1) species, the larvae of which may develop in dead poplar, which is only known from a single British locality (Chippenham Fen) (Alexander, 2002).

***Tasiocera* (*Dasymophilus*) *fuscescens* (Lackschewitz, 1940)**

This species was recorded by Mendl (1987) from two localities in County Kerry and one locality in County Wicklow.

WICKLOW: 24.vi.1975, Glendalough T1-9- (PU.3), PJC; 25.vi.1975, Devil's Glen T2-9- (PU.3), PJC.

***Tasiocera* (*Dasymophilus*) *murina* (Meigen, 1818)**

This species was recorded by Edwards (1929) from Killarney before Freeman (1951) added several additional species to the British Isles fauna. However, the Edwards (1929) record is confirmed because the only Irish locality referred to in Freeman (*op. cit.*) is "Kerry", under the species *murina*, which is evidently the Killarney material.

Recorded by Mendl (1987) from Counties Cork, Donegal, Galway, Kerry, Sligo and Wicklow.

ANTRIM: 24.v.1975, Portglenone Forest C9802 (PA.3), AGI; **CLARE**: 25.v.1992, Lisdoonvarna Spa R1397 (MU.3), JMOC; 27.v.1992, Corker Pass, Burren M3110 (MU.3),

JPOC; 29.v.1992, Corkscrew Hill M2020 (MU.3), JPOC; 30.v.1992, near Ballyvaughan, Burren M2207 (MU.3), JPOC; 2.vi. 1992, Rathborney River M1905 (MU.3), JPOC; 31.vi.1992, Kilshanny R1293 (MU.3), JPOC; **KERRY**: 25-27.v.1929, Killarney (MT.3), FWE (Edwards, 1929; Freeman, 1951, "Kerry"); 5.v.1986, Muckross House, beechwood (MT.3), PJC; **OFFALY**: 27.v.1984, Charleville Woods (NV.4), PJC; **TIPPERARY**: 22.vi.1975, Woodrooff S1-2- (NU.4), PJC; 27.v.1984, near Ballina, small wood R710725 (NU.1), JPOC; **WATERFORD**: 21.vi.1975, Gurteen S2-2- (NU.4), PJC; 11.vi.1991, Belle Lake S6605 (PT.1), JPOC; **WEXFORD**: 7.vi.1986, Oaklands S715255 (PU.2), JMOC; 27.v.1987, Killoughrim Forest Park S8941 (PU.4), JPOC; **WICKLOW**: 24.vi.1975, Glendalough T1-9- (PU.3), PJC; 25.vi.1975, Devil's Glen T2-9- (PU.3), PJC; 27.v.1988, Avondale T1985 (PU.3), JPOC; vi.1988, Blackditch Wood O3103 (PU.3), REB/RMB (Blackith *et al*., 1991); v.1989, Blackditch Wood O3103 (PU.3), REB/RMB, bred from rotten birch (Blackith *et al*., 1991); v.1989, Killoughter Fen T3199 (PU.3), REB/RMB, bred from *Phragmites* stem bases (Blackith *et al*., 1991); 28.v.1989, Knocksink Wood O2117 (PU.3), JPOC; 27.v.1991, beside the River Vartry, at Mount Usher, Ashford T2796 (PU.3), JMOC.

***Trimicra pilipes* (Fabricius, 1787)**

In Mendl (1987), it is recorded from one County Meath locality.

DOWN: 24.viii.1998, Green Island, Strangford Lough J5351 (UF.2), KNAA; **DUBLIN**: 9.v.1982, Bull Island, alder marsh O2439 (PV.4), JMOC; **KERRY**: 8.ix.1982, Ardfert Q7821 (MT.1), EGH (Hancock, 1990 sub *Erioptera*); **WESTMEATH**: 2.vii.1980, Coosan Lough, light trap N050544 (NV.4), JPOC; 7.v.1988, Ballynafid Lake (PV.2), PJC.

Discussion

The only Irish county out of a total of 32 counties for which there are no Chioneinae records is Longford. The most common and widespread Irish species is *Molophilus griseus*. From the available records several other species including *Cheilotrichia* (*Empeda*) *cinerascens*, *Erioconopa trivialis*, *Erioptera* (*Erioptera*) *fuscipennis*, *Erioptera* (*Erioptera*) *lutea* and *Symplecta* (*Psiloconopa*) *stictica* are also very common and widespread.

There are five genera (*Arctoconopa*, *Dicranoptycha*, *Gnophomyia*, *Idiocera* and *Rhabdomastix*) and 42 additional species of Chioneinae recorded in Britain which have not been found in Ireland but the majority of these can be expected to be discovered eventually. Based on Falk's (1991) assessment of the scarce and threatened flies in Britain (with the addition here of *Hoplolabis* (*Parilisia*) *yezoana* as a red data book species awaiting categorisation) there are 11 species of Irish Chioneinae, or 18% of the known fauna, which fit into one of the four main Red Data Book [= RDB] categories which in order of importance are "RDB1 - endangered", "RDB2 - vulnerable", "RDB3 - rare" and "notable". The following is a list of these 11 species and their ranking based on Falk (1991) for 10 of these species plus the addition of *Hoplolabis* (*Parilisia*) *yezoana* whose exact red data book status is not yet decided.

Tasiocera (*Dasymophilus*) *collini*	RDB1 - Endangered
Erioptera (*Erioptera*) *meijerei*	RDB2 - Vulnerable
Molophilus czizeki	RDB3 - Rare
Molophilus lackschewitzianus	RDB3 - Rare
Cheilotrichia (*Cheilotrichia*) *imbuta*	Notable
Erioptera (*Erioptera*) *nielseni*	Notable
Gonomyia (*Gonomyia*) *bifida*	Notable
Gonomyia (*Gonomyia*) *conoviensis*	Notable
Molophilus bihamatus	Notable
Molophilus propinquus	Notable
Neolimnophila carteri	Notable
Scleroprocta sororcula	Notable
Hoplolabis (*Parilisia*) *yezoana*	Category not decided

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We are grateful to M. A. O'Connor and Dr M. C. D. Speight for specimens. Sincere thanks to Dr P. Oosterbroek for permission to include records of specimens collected by P. Oosterbroek and M. Dierks which are preserved in the entomological collections of the Institute of Taxonomic Zoology, Amsterdam, The Netherlands. The assistance of Nigel Wyatt, Natural History Museum, London, during a visit in September 2007, is greatly appreciated as it enabled Patrick Ashe and Peter Chandler to check the pinned collections for data relating to some published and unpublished Irish records.

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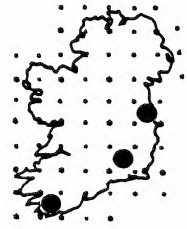
TABLE 1. List of 19th century Chioneinae recorded from Ireland in Haliday (1833) and Walker (1856) with numbers representing the same species found in both publications. * Species No. 2, *Rhypholophus varius* (Meigen, 1818), which is recorded in Haliday (1833) is missing from Walker (1856).

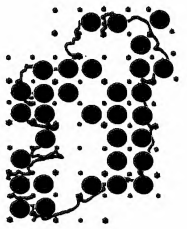
Page	Name used by Haliday	Identity of Name used by Haliday	
148	*Erioptera maculata*	*Ilisia maculata* (Meigen, 1804)	**1**
148	*Erioptera varia*	*Rhypholophus varius* (Meigen, 1818)	**2***
148	*Erioptera atra*	*Molophilus ater* (Meigen, 1804)	**3**
148	*Symplecta stictica*	*Symplecta* (*Psiloconopa*) *stictica* (Meigen, 1804)	**4**

Page	Name used by Walker	Identity of Name used by Walker	
274-5	*Erioptera maculata*	*Ilisia maculata* (Meigen, 1804)	**1**
276	*Erioptera lineata*	*Ormosia* (*Ormosia*) sp.	
276-7	*Erioptera trivialis*	*Erioconopa trivialis* (Meigen, 1818)	
277	*Erioptera taenionota*	*Erioptera* (*Erioptera*) *lutea* Meigen, 1804	
278	*Erioptera atra*	*Molophilus ater* (Meigen, 1804)	**3**
279	*Symplecta stictica*	*Symplecta* (*Psiloconopa*) *stictica* (Meigen, 1818)	**4**
279-80	*Symplecta punctipennis*	*Symplecta* (*Symplecta*) *hybrida* (Meigen, 1804)	
304	*Limnobia lateralis*	*Ellipteroides* (*Ellipteroides*) *lateralis* (Macquart, 1835)	

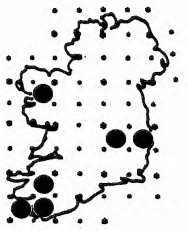
FIGURE 1. Distribution maps, based on the UTM 50km grid, for Chioneinae cranefly species occurring in Ireland, as well as a coverage map for all records.



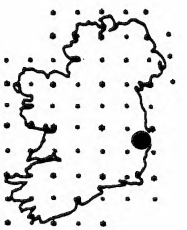
Cheilotrichia (Cheilotrichia) imbuta



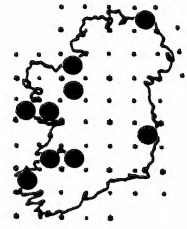
Cheilotrichia (Empeda) cinerascens



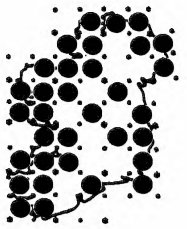
Crypteria limnophiloides



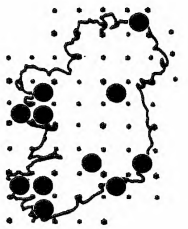
Ellipteroides (Ellipteroides) lateralis



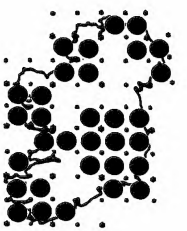
Erioconopa diuturna



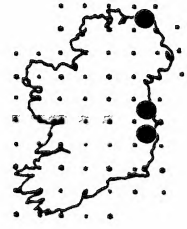
Erioconopa trivialis



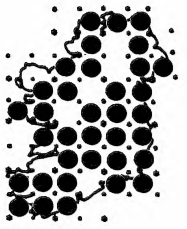
Erioptera (Erioptera) flavata



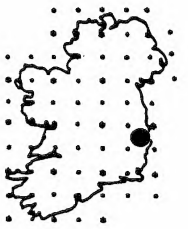
Erioptera (Erioptera) fuscipennis



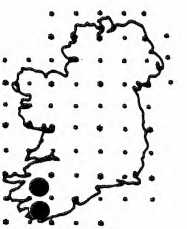
Erioptera (Erioptera) griseipennis



Erioptera (Erioptera) lutea

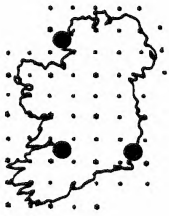


Erioptera (Erioptera) meijerei

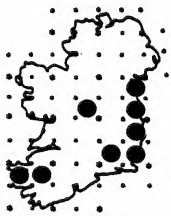


Erioptera (Erioptera) nielseni

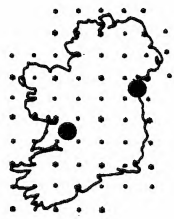
FIGURE 1 (Continued).



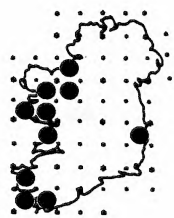
Erioptera (Erioptera) squalida



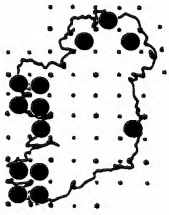
Gonempeda flava



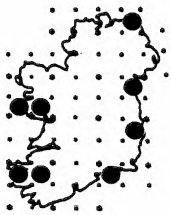
Gonomyia (Gonomyia) bifida



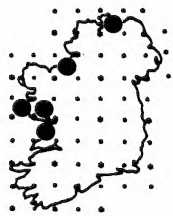
Gonomyia (Gonomyia conoviensis



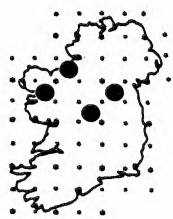
Gonomyia (Gonomyia) dentata



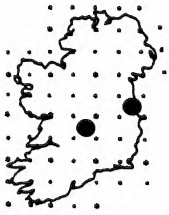
Gonomyia (Gonomyia) lucidula



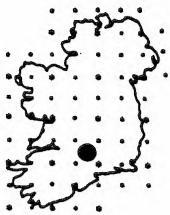
Gonomyia (Gonomyia) simplex



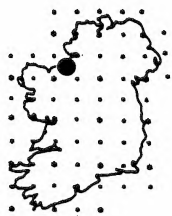
Gonomyia (Gonomyia) tenella



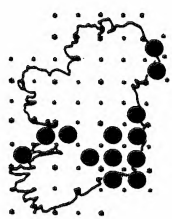
Hoplolabis (Parilisia) areolata



Hoplolabis (Parilisia) vicina

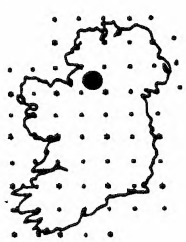


Hoplolabis (Parilisia) yezonana

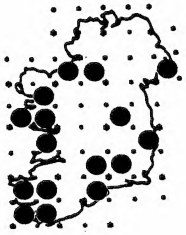


Ilisia maculata

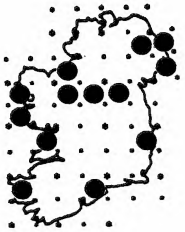
FIGURE 1 (Continued).



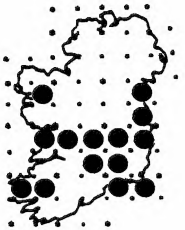
Ilisia occoecata



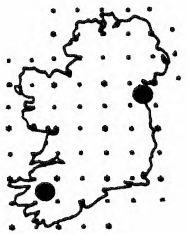
Molophilus appendiculatus



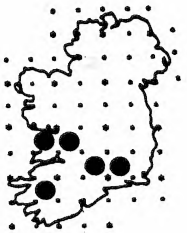
Molophilus ater



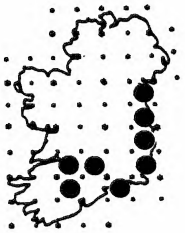
Molophilus bifidus



Molophilus bihamatus

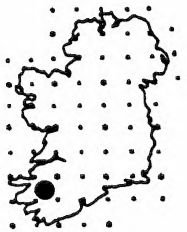


Molophilus cinereifrons

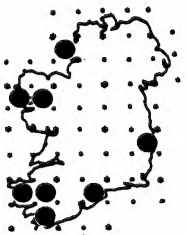


Molophilus crassipygus

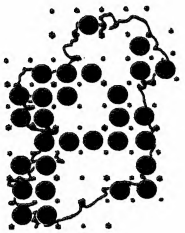
Molophilus curvatus



Molophilus czizeki



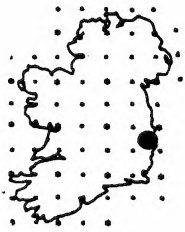
Molophilus flavus



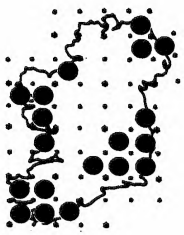
Molophilus griseus

Molophilus lackschewitzianus

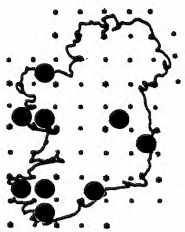
FIGURE 1 (Continued).



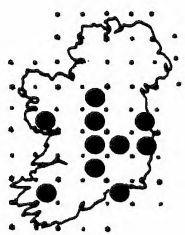
Molophilus medius



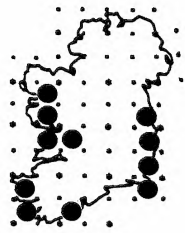
Molophilus obscurus



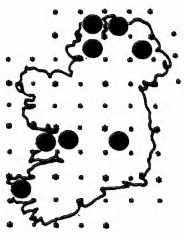
Molophilus occultus



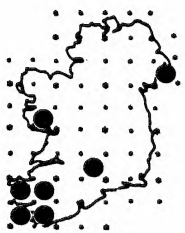
Molophilus ochraceus



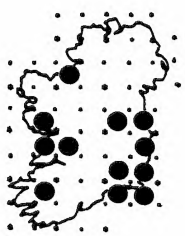
Molophilus pleuralis



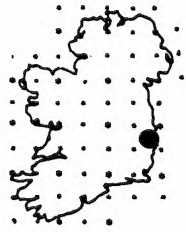
Molophilus propinquus



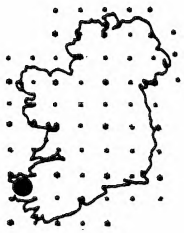
Molophilus pusillus



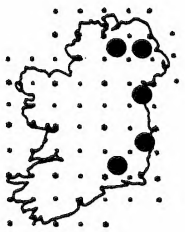
Molophilus serpentiger



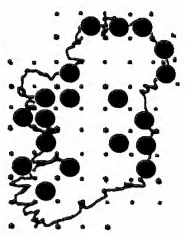
Neolimnophila carteri



Ormosia (Ormosia) albitibia

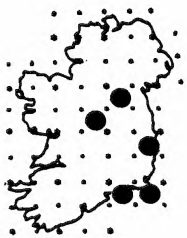


Ormosia (Ormosia) depilata

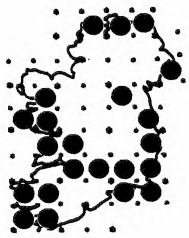


Ormosia (Ormosia) hederae

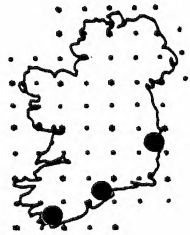
FIGURE 1 (Continued).



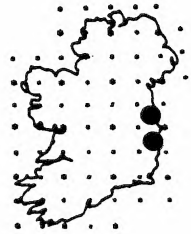
Ormosia (Ormosia) lineata



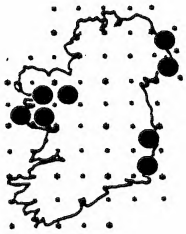
Ormosia (Ormosia) nodulosa



Ormosia (Ormosia) pseudosimilis

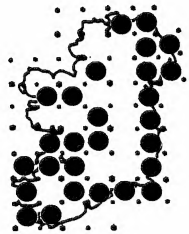


Rhypholophus bifurcatus

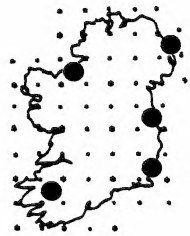


Rhypholophus varius

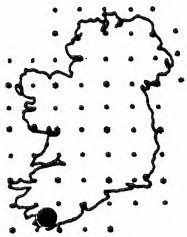
Scleroprocta sororcula



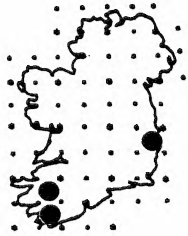
Symplecta (Psiloconopa) stictica



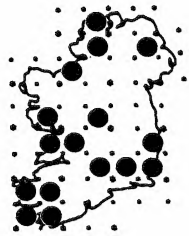
Symplecta (Symplecta) hybrida



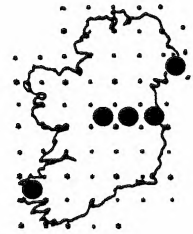
Tasiocera (Dasymophilus) collini



Tasiocera (Dasymophilus) fuscescens

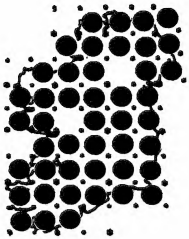


Tasiocera (Dasymophilus) murina



Trimicra pilipes

FIGURE 1 (Continued).



Coverage

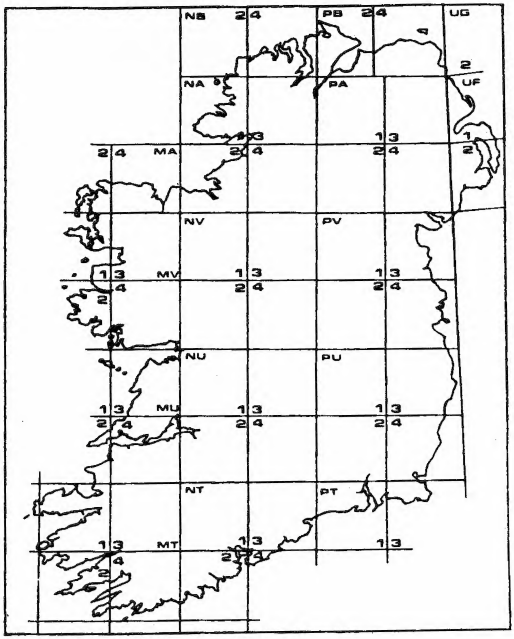


FIGURE 2. Part of page 210 from Haliday's unpublished ms 'Catalogue of Irish insects' which shows *Molophilus atra* [= *ater*] and *Molophilus brevipennis* [= *ater*] and the abbreviation "Hwd" in the right-hand margin for Holywood, County Down. A weak line connects *brevipennis* to *atra* indicating that Haliday was aware that they are synonymous.

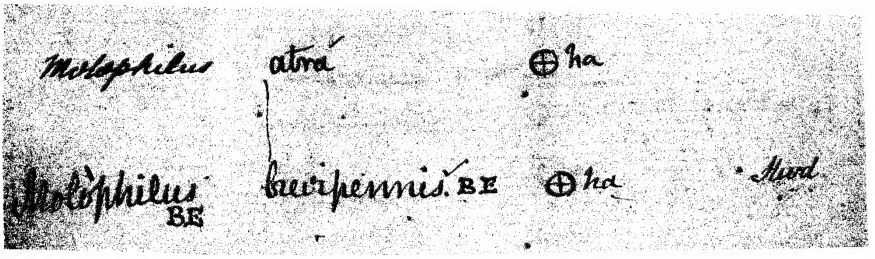
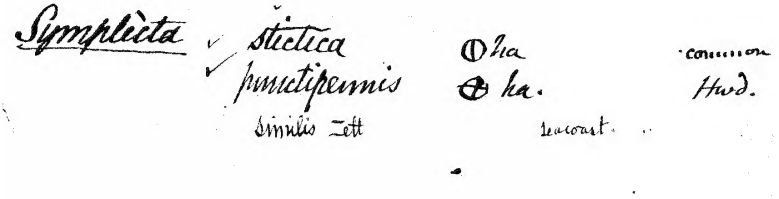


FIGURE 3. Part of page 209 from Haliday's unpublished ms 'Catalogue of Irish insects' which shows *Symplecta punctipennis*, a synonym of *hybrida*, a + inside a circle and "ha' for Haliday, and the abbreviation "Hwd" in the right-hand margin for Holywood, County Down. Also shown are *Symplecta stictica* with the word "common" in the right-hand margin and "*similis* Zett" followed by a wide gap and the word "seacoast".



BOOK REVIEW

Illustrations of alien plants of the British Isles by E. J. Clement, D. P. J. Smith and I. R. Thirwell. BSBI, London. 2005. ISBN 0901158321. A5 format, soft cover, pp viii + 466 including 444 full page line drawings; bibliography; index. Available from BSBI Publications, Summerfield Books, Main Street, Brough, Cumbria, CA 17 4AX, England.
www.summerfieldbooks.com
Price £18.75 (+ postage: £3.50 UK; £4.20 Republic of Ireland).

The size, format and design of this book are uniform with Clement and Foster's *Alien Plants of the British Isles* (BSBI, 1994) and Ryves, Clement and Foster's *Alien Grasses of the British Isles* (BSBI, 1996), but the potential purchaser should be aware that this volume is not intended as a book of illustrations of the species listed in either of the earlier works. For one thing the total number of species listed in those works is far too great to be accommodated in a volume of only 470 pages or so (this present work contains 444 drawings), and the other is that, as the introductory pages make clear, the history of this new volume is altogether different.

Identifying alien plant species is a difficult task, particularly because of the paucity of good illustrations of such species. In the 1960's, the late David McClintock conceived the idea of preparing a third volume concentrating on alien species to accompany the two volumes of R. W. Butcher's *A New illustrated British Flora* (London, 1961) — nowadays a rather underappreciated and relatively little known work, but one which contains helpful drawings of most of the native and naturalised vascular plants of Great Britain and Ireland. To this end he marshalled the efforts of a number of talented botanical artists many of whom are, alas, now deceased. After McClintock's own death in 2001, Eric Clement and his collaborators brought together all the completed illustrations and, forty or more years after the initiation of the project, produced the present volume.

Because of the nature of the origins of the project, there is no even coverage of all the alien species recorded from these islands. The number of species is about 444 and the choice has been determined by the available illustrations. About a dozen or so artists have contributed, so

there is an obvious diversity of styles, but the overall quality is excellent and the presentation is reminiscent of Butcher's two volumes of 1961, except, of course, that there are no descriptions of the plants, nor colour notes of the kind found in Stella Ross-Craig's *Drawings of the British Flora.* For these, the user will need to turn to other works such as Stace's *New Flora of the British Isles* etc. Likewise there are no distribution data, although, where it had been recorded, the provenance of the original specimen (wherever possible McClintock insisted on the drawings being made from a live plant) from which the drawings were made has been given.

Altogether, this is a valuable contribution to the available body of good botanical illustrations of diagnostic quality, and it has rescued from potential obscurity a collection of work by many artists which deserves to be used.

PAUL HACKNEY

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Number 8. *A catalogue and index of the publications of the Irish Biogeographical Society* (1977-2004)

J. P. O'Connor

Published 2005. 74pp. Price €10.

Number 9. *Fauna and flora of Atlantic islands. Proceedings of the 5th international symposium on the fauna and flora of the Atlantic islands, Dublin 24 -27 August 2004.*
Edited by T. J. Hayden, D. A. Murray and J. P. O'Connor
Published 2006. 213pp. Price €10.

Number 10. *A catalogue of the Irish Ichneumonidae (Hymenoptera: Ichneumonoidea)*
J. P. O'Connor, R. Nash and M. G. Fitton
Published 2007. 310pp. Price €10.

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The Bulletin is sent free to all members. The annual membership fee is €15 or £10. To-date, 30 volumes have been published. Back issues may be purchased for €15 or £10. Discounts are given for large orders.

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James P. O'Connor, Patrick Ashe and John Walsh
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An annotated checklist of the Irish butterflies and moths (Lepidoptera)
K. G. M. Bond, R. Nash and J. P. O'Connor
Published in association with The National Museum of Ireland. 2006. 177pp. Price €25 or £25.

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NOTICES

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